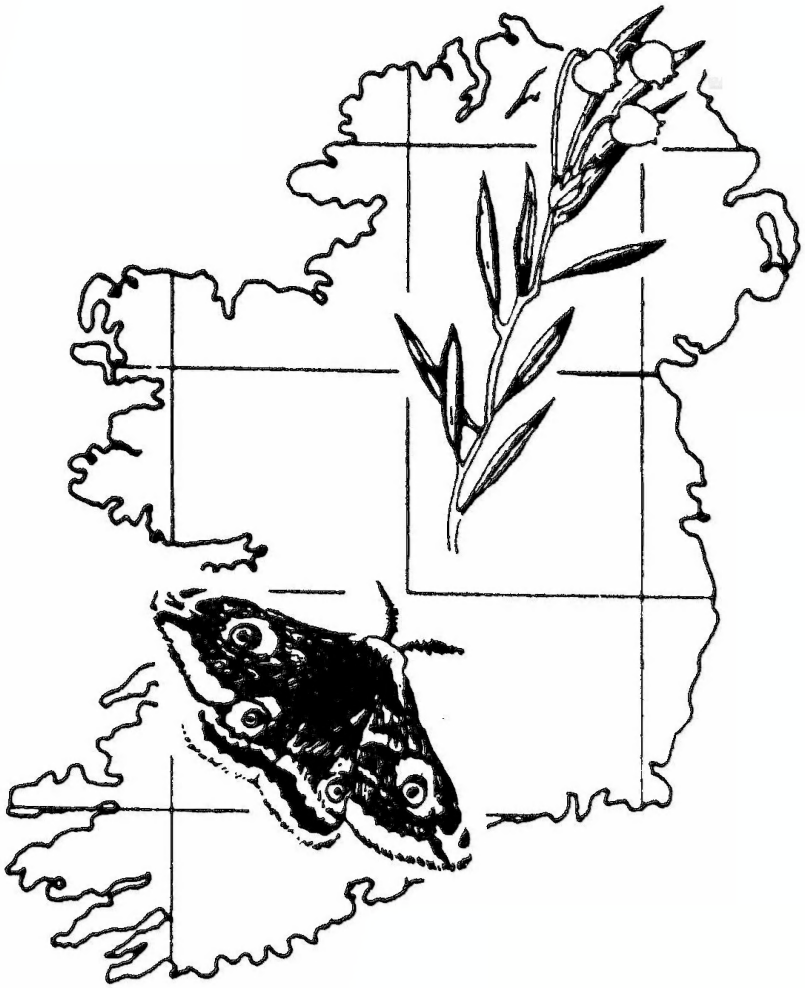
IRISH BIOGEOGRAPHICAL SOCIETY



Bulletin No. 38

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Enquiries concerning the Bulletin (including the purchase of back issues) may be sent to The Irish Biogeographical Society c/o the Editor Dr J. P. O'Connor, The National Museum of Ireland, Kildare Street, Dublin 2, Ireland or by e-mail to: the Treasurer Mr John Walsh at <ampersandwalsh@gmail.com>.

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Number 38

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EDITORIAL

The format of Bulletin No 38 is different to that of previous Bulletins. The spacing has been reduced to improve legibility and to reduce the number of pages required. Without these changes, the present volume would have been the largest ever published by the Society with the consequent increased costs of printing and postage. Over 100 pages have been saved.

The Bulletin contains eight articles reflecting some of the research interests of the members. Part 2 of the important work on the distribution of the Irish non-biting midges or chironomids is published. Part 1 appeared in Bulletin No. 37 while Part 3 will be included in Bulletin 39. The entire database will deal with some 533 species. When completed, a pdf will be made available of the work. Declan Murray, the senior author of the list, also reports on some interesting chironomid records from the Canary Islands.

Jervis Good also continues his work on the Tardy Collection in Trinity College, University of Dublin. As well as a reassessment of some of the records, the opportunity is taken to include a previously unpublished colour portrait of James Tardy along with biographical information.The caddisflies of Northern Ireland have been little studied compared with other areas of Ireland. This situation partly arose due to the civil strife there for many years when it was often considered unsafe to run light traps etc. Two papers, with distributional information, are included in this volume. The larger one is based on the RIVPACS Database and the authors are very grateful for permission to access that data. Full acknowledgements will be found in the paper.

Declan Quigley and Sean Moffat present an intriguing article on a deer observed swimming out to sea at Greystones, Co. Wicklow, and the possible causes. Martin Cawley provides some interesting records of uncommon Irish beetles and Myles Nolan records a new Irish spider. The referee of the beetle ms remarked that "It is particularly welcome that such contributions are being made on the Irish Coleoptera, which are a neglected group". This neatly brings us to our referees who play an important role in the Bulletin. On behalf of the Society, I would like to thank them and our sponsors. The support of our sponsors is essential for the continuing survival of the Bulletin. Their financial help is greatly appreciated especially in these difficult times with so many pressures on their budgets.

J. P. O'Connor
Editor
4 October 2014

INSTRUCTIONS TO AUTHORS

1. Manuscripts should follow the format of articles in this *Bulletin*. The titles of journals should be given in full in the references.

2. Manuscripts may be sent as typed copy on A4 paper, using double-spacing and 2.5cm (one inch) margins with the text and any figures also on an accompanying compact disc to the Editor, Dr J. P. O'Connor, emeritus entomologist, National Museum of Ireland, Kildare Street, Dublin 2, Ireland. Alternatively, mss may be submitted electronically *via* our Treasurer Mr John Walsh at <ampersandwalsh@gmail.com> or the Editor at <joconnor@museum.ie>.

3. Word is preferred and Times New Roman 13pt should be used.

4. Figures and tables should be submitted in a size suitable for reduction to A5 without loss of detail. It is important that the text should remain legible after reduction. JPEGs are preferred for figures.

5. Records: please ensure that, when possible, the following information is incorporated in each record included in a manuscript:-
(a) latin name of organism.
(b) statement of reference work used as the source of nomenclature employed in the text. The describer's name should be also given when a zoological species is first mentioned in the text.
(c) locality details including at least a four figure Irish grid reference (e.g. N3946), county or vice-county and some ecological data about the collection site, plus date of capture.
(d) Collector's name and determiner's name (where different from collector's name), and
(e) altitude data should be included where relevant.

Bulletin of the Irish Biogeographical Society **No. 38** (2014)

RECORDS OF TRICHOPTERA (INSECTA) FROM NORTHERN IRELAND

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Abstract

A total of 313 macroinvertebrate taxa were recorded from the 70 running-water sites in the River InVertebrate Prediction And Classifcation System (RIVPACS III) dataset from Northern Ireland from 1990-1993. Additional samples were taken in 2000. Although the first paper on Northern Ireland Trichoptera was published over 150 years ago, the caddisfly fauna is poorly known compared with that of the rest of the island. As a result, the RIVPACS trichopteran data are presented here. Many of these records are of great interest as they are the first ones for Northern Ireland. Information is provided on 43 species.

Key words: Trichoptera, RIVPACS, Northern Ireland, distribution

Introduction

A total of 313 macroinvertebrate taxa were recorded from the 70 running-water sites in the River InVertebrate Prediction And Classification System (RIVPACS III) dataset from Northern Ireland (Wright *et al.*, 2000). The research was funded by the Department of the Environment for Northern Ireland. RIVPACS is used for the biological assessment of 'river quality' in both national and local surveys in the United Kingdom and an introduction to it is given in Wright (2000). The dataset is held by the Centre for Ecology and Hydrology, a component part of the Natural Environment Research Council (NERC). Wright *et al.* (2000) provided a summary of the trichopteran species taken in the study but no locations were given. The first paper on Northern Ireland Trichoptera was published over 150 years ago (McLachlan, 1861) but despite this, the caddisfly fauna is poorly known compared with that of the rest of the island. As a result, permission has been granted to access the RIVPACS trichopteran data and details of the records are presented here. Many of these records are of great interest as they are the first ones for Northern Ireland *viz. Agraylea multipunctata* Curtis, *Allotrichia pallicornis* (Eaton) *Neureclipsis bimaculata* (Linnaeus), *Polycentropus irroratus* (Curtis), *Cheumatopsyche lepida* (Pictet), *Hydropsyche angustipennis* (Curtis), *Hydropsyche pellucidula* (Curtis), *Silo nigricornis* (Pictet), *Lepidostoma basale* (Kolenati), *Drusus annulatus* (Stephens), *Ecclisopteryx*

dalecarlica Kolenati, *Odontocerum albicorne* (Scopoli), *Beraeodes minutus* (Linnaeus), *Athripsodes albifrons* (Linnaeus), *Athripsodes bilineatus* (Linnaeus), *Ceraclea dissimilis* (Stephens) and *Ceraclea nigronervosa* (Retzius). Altogether, information is provided on 43 species. A further 11 taxa, only identified to genus, are not included.

Material and methods

The selected sites were of high biological quality and represented as wide a range of stream and river types and locations as possible. The samples were collected by the staff of the Industrial Research and Technology Unit (IRTU) using the standard RIVPACS protocols (Furse *et al.*, 1981; Wright *et al.*, 1984; Environment Agency, 1997). Those reported in Wright *et al.* (2000) were collected in 1990-1993. Further ones were taken in 2000. Each site was subjected to a three minute pond-net sample (plus one minute manual search) in spring (February-May), summer (June-August) and autumn (September-November). All available habitats were sampled in proportion to their occurrence in order to acquire the most comprehensive list of taxa for each site within the stated time. Subsequent sorting and identification of the fauna was undertaken by staff at the Institute of Freshwater Ecology (IFE) River Laboratory. The trichopteran larvae were determined using Wallace *et al.* (1990) and Edington and Hildrew (1995).

Presentation of the data

The presented data have been abstracted from an EXCEL file. The river names follow Wright *et al.* (2000). The number of specimens in each sample is given in bold in parentheses before the date of collection. Six figure grid references are given and these have been plotted on longitude and latitude distribution maps using D-MAP (Figs 1-43). A topographical map is also provided (Fig. 44). The distribution maps are adapted from an all-Ireland one (Fig. 45). Since the counties were not included in the file, JPOC has located the relevant ones. In some cases, rivers formed the boundary between counties and then only one county is given based on an examination of maps showing the catchments. The Irish counties are shown (Fig. 46).

The recorded species

RHYACOPHILIDAE

1. *Rhyacophila dorsalis* (Curtis, 1834)

Previously recorded from Counties Antrim, Down, Fermanagh and Tyrone (King and Halbert, 1910; Fahy, 1972; Carter and Wood, 1995), *Rhyacophila dorsalis* is widely distributed in Northern Ireland (Fig. 1).

RIVPACS records

ANTRIM: Cashel Burn, Downstream Bridge (D173069), (**11**) 15 May, (**6**) 26 July and (**17**)

25 October 2000; **Coopers Water**, Boomers Bridge (J216757), (**17**) 22 May, (**112**) 7 June and (**8**) 6 September 2000; **Crew Burn**, Carrols Bridge (J134707), (**1**) 7 June 2000; **Doagh R.**, Dunamoy (J260935), (**16**) 5 June and (**3**) 6 September 1991; **Doagh R. tributary**, Dixons Corner (J258937), (**16**) 16 May, (**39**) 13 June and (**7**) 18 September 2000; **Douglas Burn**, Lynnas Bridge (J227998), (**7**) 16 May, (**6**) 14 June and (**1**) 25 October 2000; **Dunnstown Burn**, Dunnstown (D048095), (**19**) 16 May, (**9**) 19 June and (**2**) 25 October 2000; **Glynn R.**, Glynn (J408999), (**1**) 6 June and (**12**) 14 November 1991; **Kellswater**, Rock Bridge (J160983), (**2**) 30 March, (**27**) 2 August and (**1**) 29 October 1990; **Legnagooly Burn**, Legnagooly Bridge (D132128), (**18**) 16 May, (**17**) 19 June and (**6**) 25 October 2000; **R. Braid**, Harryville Bridge (D105030), (**1**) 30 March and (**8**) 2 August 1990; **R. Bush**, Ballyhoe (D077291), (**4**) 15 May and (**18**) 30 July 1991; **R. Bush**, Seneirl Bridge (C942360), (**1**) 21 March, (**10**) 31 July and (**9**) 6 November 1990; **R. Clady** (Clady Water), Dunadry (J194846), (**1**) 22 February and (**3**) 30 May 1991; **R. Clady**, Glenone Bridge (C963038), (**6**) 2 March, (**28**) 5 June and (**3**) 12 October 1990; **R. Clogh**, Glarryford Bridge (D062131), (**2**) 1 August 1991; **R. Crumlin**, Airport Bridge (J192767), (**6**) 8 October 1992; **R. Dervock**, Iderown Bridge (D021334), (**2**) 21 March, (**32**) 31 July and (**2**) 6 November 1990; **R. Glenarm**, Glenarm (D310149), (**24**) 30 May and (**24**) 15 August 1990; **R. Glenshesk**, B15 Road Bridge (D126406), (**4**) 14 August 1990; **R. Larne**, Owens Bridge (D378008), (**17**) 20 February, (**18**) 6 June and (**2**) 14 November 1991; **R. Main**, Dunmore Bridge (J087896), (**16**) 28 March, (**28**) 2 August and (**1**) 5 November 1990; **Ross Burn**, Rossburn (J159973), (**13**) 22 May, (**16**) 14 June and (**2**) 25 October 2000; **Six Mile Water**, Ballyboley Bridge (J315950), (**10**) 16 May, (**36**) 12 June and (**22**) 18 September 2000; **Six Mile Water**, below Ballyclare (J285903), (**2**) 6 March, (**2**) 1 June and (**42**) 26 September 1990.

ARMAGH: Forkhill R., Forkhill Lower Bridge (J015157), (**1**) 25 March and (**4**) 23 October 1991; **Kilnasaggart (R.)**, Kilnasaggart Bridge (J060150), (**2**) 3 April, (**1**) 17 July and (**8**) 23 October 2000; **R. Callan**, Paper Mill Bridge (H857392), (**8**) 5 April, (**56**) 3 July and (**8**) 1 October 1990.

DERRY (LONDONDERRY): Cam Burn, Ballynacally Beg (C843212), (**5**) 16 May 2000; **Miltown Burn**, A29 Road Bridge (H848997), (**1**) 8 May 2000; **R. Aghadowey**, White Bridge (C879228), (**4**) 29 May and (**40**) 30 October 1990; **R. Agivey**, Glen Ullin (C792124), (**6**) 16 May, (**36**) 29 June and (**1**) 21 September 2000; **R. Ballinderry**, Ballinderry Bridge (H927798), (**18**) 25 May and (**20**) 13 August 1990; **R. Ballinderry**, Corkhill Bridge (H734793), (**16**) 14 March and (**6**) 18 November 1991; **R. Douglas**, Boheradaile (H774967), (**15**) 15 August 2000; **R. Faughan**, Ardmore (C474134), (**2**) 20 May and (**1**) 5 August 1990; **R. Inver**, Inver Bridge (C535010), (**3**) 26 April and (**5**) 28 Sepember 2000; **R. Mayoghill**, Caheny Bridge (C889191),

(**2**) 16 May, (**4**) 29 June and (**10**) 21 September 2000; **R. Moyola**, New Bridge (H956905), (**1**) 5 June 1990; **R. Owenbeg**, Dungiven (C683098), (**1**) 16 June and (**2**) 5 September 1990; **R. Owenrigh**, Carnanbane (C669067), (**4**) 16 June, (**5**) 5 September 1990 and (**1**) 7 April 1991; **R. Roe**, Corick Bridge (C751063), (**8**) 11 April, (**16**) 16 June and (**5**) 5 September 1990.

DOWN: Begny Hill Feeder, Woodford Bridge (J289502), (**1**) 22 May and (**2**) 7 June 2000; **Cassy Water**, Cassy Water Bridge (J238149), (**2**) 20 May 1990, (**4**) 21 February and (**11**) 5 September 1991; **R. Annacloy**, Annacloy Bridge (J448484), (**12**) 16 March 1990; **R. Annalong**, Annalong Bridge (J374198), (**5**) 6 March and (**2**) 23 May 1991; **R. Kinnahalla**, upstream New Bridge (J239289), (**2**) 22 May and (**12**) 21 June 2000; **R. Shankys**, Tornamrock Park (J225255), (**3**) 3 April, (**1**) 21 June and (**1**) 4 September 2000; **R. Shimna**, Tollymore Forest (J353323), (**2**) 20 November 1991; **Spences R.**, Glassdrumman Bridge (J377228), (**2**) 1 November 2000; **Upper Bann**, Ballydown (J138450), (**2**) 12 June 1990 and (**1**) 24 September 1992; **Upper Bann**, Hilltown (J218291), (**4**) 12 March, (**1**) 8 June and (**29**) 25 September 1990.

FERMANAGH: Cooneen Water, Legatillida (H455396), (**2**) 30 April, (**1**) 7 August and (**13**) 8 November 2000; **Foxhill Burn**, Drumcreen (H279529), (**2**) 24 May and (**6**) 15 August 2000; **Lisnabane Burn**, Lisnabane Bridge (H379447), (**1**) 10 August 2000; **R. Arney**, Brockagh (H175375), (**2**) 18 September 1990; **R. Ballinamallard**, Magheracross (H281537), (**1**) 22 April, (**6**) 25 July and (**1**) 19 September 1990; **R. Bannagh**, Bannagh Bridge (H162654), (**4**) 20 July 1990; **R. Black**, Drumkeenagh (H018435), (**3**) 27 April and (**3**) 18 July 1990; **R. Boho**, Boho (H134445), (**4**) 21 April, (**56**) 16 July and (**5**) 23 October 1990; **R. Colebrooke**, Tullyreagh Cross (H378441), (**1**) 19 April, (**4**) 17 July and (**2**) 17 September 1990; **R. Garvary**, Larkhill (H009630), (**1**) 20 April, (**4**) 23 July and (**4**) 25 October 1990; **R. Glendurragh**, Ederny (H222652), (**1**) 26 April and (**1**) 24 July 1990; **R. Lack**, Croneen (H256665), (**3**) 22 March, (**1**) 12 August and (**6**) 1 November 2000; **R. Roogagh** (Glen R.), Garrison (G941518), (**8**) 27 April, (**16**) 18 July and (**8**) 20 September 1990; **R. Sillees**, Derrygonnelly (H118521), (**16**) 19 July and (**8**) 23 October 1990; **R. Sillees**, Drumkeen New Bridge (H230413), (**2**) 16 July 1990; **R. Termon**, Killynoogan (H111659), (**3**) 20 July 1990.

TYRONE: Ballygawley R. (Ballygawley Water), Lismore Bridge (H630538), (**2**) 26 February, (**130**) 11 June and (**7**) 22 October 1991; **Ballynahatty Water** (R. Owenreagh), Ballynahatty (H437673), (**36**) 20 June and (**2**) 2 September 1990; **Dreenan Burn**, Dreenan Bridge (H212843), (**4**) 28 March and (**1**) 15 November 2000; **Dunnyboe Burn**, Dunnyboe Bridge (H459993), (**2**) 19 April and (**7**) 19 July 2000; **Fairywater**, Mullanatoomog (H392766), (**1**) 23 May 1990; **Fury R.**, Belalastera Bridge (H552517), (**4**) 11 June and (**12**) 27 October 1991; **Glashagh Burn**, Cashel Wood (H615803), (**9**) 31 July 2000; **Gortin Water**, Gortin Bridge (H782792), (**8**) 27 March, (**8**) 3 July and (**5**) 26 September 2000; **Granagh Burn**,

Carrickmore (H604721), (**9**) 5 April, (**4**) 26 July and (**10**) 13 November 2000; **Lissan Water**, Drumgrass Bridge (H806816), (**3**) 14 March 1991 and (**15**) 10 June 1993; **Oughtmame Burn**, Oughtmame (H625937), (**2**) 17 April, (**4**) 7 August and (**6**) 5 October 2000; **R. Blackwater**, Caledon Bridge (H759446), (**11**) 26 September 1991; **R. Blackwater**, Derrymeen Bridge (H625530), (**1**) 26 February 1991; **R. Camowen**, Donnelly's Bridge (H464730), (**2**) 8 April, (**18**) 21 June and (**21**) 3 September 1990; **R. Cleen**, Kiltermon Bridge (H475482), (**1**) 7 August 2000; **R. Cloghfin**, Ballykeel Bridge (H572671), (**3**) 24 May, (**19**) 27 July and (**6**) 13 November 2000; **R. Coolaghty**, Coolaghty (H257673), (**2**) 22 March, (**20**) 12 August and (**3**) 2 November 2000; **R. Derg**, Aghyaran Bridge (H191806), (**26**) 9 April, (**18**) 6 August and (**1**) 6 September 1990; **R. Derg**, Crewe Bridge (H315845), (**17**) 22 May, (**32**) 6 August and (**4**) 12 November 1990; **R. Glenelly**, Clougherny Bridge (H563913), (**4**) 21 May, (**1**) 6 August and (**1**) 13 November 1990; **R. Owenkillew**, Broughderg Bridge (H684853), (**5**) 12 April, (**2**) 31 July and (**2**) 2 October 2000; **R. Owenkillew**, Killymore Bridge (H438873), (**11**) 18 June and (**18**) 7 September 1990; **R. Owenkillew**, Monanameal Bridge (H613847), (**4**) 7 April, (**22**) 30 June and (**18**) 7 October 1991; **R. Owenreagh**, B84 Road Bridge (H330658), (**5**) 24 May and (**7**) 21 July 2000; **R. Owenreagh**, Cashel Bridge (H582822), (**1**) 16 June and (**18**) 8 October 1991; **R. Strule**, Moyle Bridge (H411861), (**1**) 18 June and (**5**) 3 September 1990; **Quiggery Water**, Edergoole Bridge (H449678), (**1**) 8 April, (**4**) 20 June and (**1**) 2 September 1990; **Tullynadall Burn**, Tullynadall (H447906), (**19**) 10 August and (**9**) 5 October 2000.

2. *Rhyacophila munda* McLachlan, 1862

Previously recorded from the River Clogh in Co. Antrim (Carter and Wood, 1995), *Rhyacophila munda* is widely distributed in Northern Ireland (Fig. 2).

RIVPACS records

ANTRIM: Cashel Burn, Downstream Bridge (D173069), (**11**) 15 May and (**1**) 26 July 2000; **Coopers Water**, Boomers Bridge (J216757), (**16**) 22 May 2000; **Doagh R.**, Dunamoy (J260935), (**1**) 25 February and (**16**) 5 June 1991; **Douglas Burn**, Lynnas Bridge (J227998), (**2**) 16 May 2000; **Glenariff R.**, Callisnagh Bridge (D224214), (**4**) 30 May 1990; **Glynn R.**, Glynn (J408999), (**3**) 6 June 1991; **Kellswater**, Rock Bridge (J160983), (**1**) 30 March 1990; **Legnagooly Burn**, Legnagooly Bridge (D132128), (**3**) 16 May and (**4**) 19 June 2000; **R. Bush**, Seneirl Bridge (C942360), (**2**) 21 March and (**8**) 31 July 1990; **Six Mile Water**, Ballyboley Bridge (J315950), (**5**) 16 May and (**3**) 12 June 2000.

ARMAGH: Forkhill R., Forkhill Lower Bridge (J015157), (**4**) 23 October 1991.

DERRY (LONDONDERRY): Cam Burn, Ballynacally Beg (C843212), (**5**) 16 May 2000; **R. Agivey**, Glen Ullin (C792124), (**5**) 16 May 2000; **R. Inver**, Inver Bridge (C535010), (**2**) 26

April 2000.

DOWN: R. Annacloy, Annacloy Bridge (J448484), (**8**) 16 March and (**1**) 10 July 1990; **R. Annalong**, Annalong Bridge (J374198), (**4**) 23 May 1991; **R. Kinnahalla**, upstream New Bridge (J239289), (**1**) 22 May 2000; **Upper Bann**, Hilltown (J218291), (**1**) 12 March and (**1**) 8 June 1990.

FERMANAGH: R. Ballinamallard, Magheracross (H281537), (**10**) 22 April and (**6**) 25 July 1990; **R. Black**, Drumkeenagh (H018435), (**3**) 27 April 1990; **R. Roogagh** (Glen R.), Garrison (G941518), (**1**) 18 July 1990; **R. Sillees**, Derrygonnelly (H118521), (**1**) 21 April 1990.

TYRONE: Dunnyboe Burn, Dunnyboe Bridge (H459993), (**1**) 19 April and (**1**) 19 July 2000; **Glashagh Burn**, Cashel Wood (H615803), (**1**) 31 July 2000; **Lissan Water**, Drumgrass Bridge (H806816), (**1**) 10 June 1993; **R. Owenkillew**, Broughderg Bridge (H684853), (**3**) 31 July 2000; **R. Strule**, Moyle Bridge (H411861), (**1**) 9 April 1990; **Tullynadall Burn**, Tullynadall (H447906), (**2**) 10 August 2000.

HYDROPTILIDAE

3. *Agraylea multipunctata* Curtis, 1834 **First record for Northern Ireland**

Surprisingly, only one larva was taken (Fig. 3). The species is widely distributed elsewhere in Ireland (O'Connor, 1987).

RIVPACS record

FERMANAGH: R. Finn, Wattle Bridge (H425203), (**1**) 22 July 1990.

4. *Allotrichia pallicornis* (Eaton, 1873) **First records for Northern Ireland**

Allotrichia pallicornis is widely distributed but was not found in Counties Armagh and Down (Fig. 4). The species is known elsewhere in Ireland from Counties Dublin, Meath and Wicklow (O'Connor, 1987; Duke, 1994).

RIVPACS records

ANTRIM: Cashel Burn, Downstream Bridge (D173069), (**3**) 15 May 2000; **Coopers Water**, Boomers Bridge (J216757), (**27**) 22 May and (**6**) 7 June 2000; **Doagh R.**, Dunamoy (J260935), (**11**) 5 June 1991; **Doagh R. tributary**, Dixons Corner (J258937), (**3**) 16 May and (**3**) 13 June 2000; **Dunnstown Burn**, Dunnstown (D048095), (**16**) 16 May and (**1**) 19 June 2000; **Glynn R.**, Glynn (J408999), (**1**) 6 June 1991; **Legnagooly Burn**, Legnagooly Bridge (D132128), (**8**) 16 May and (**4**) 19 June 2000; **R. Bush**, Ballyhoe (D077291), (**1**) 15 May 1991; **R. Clady** (Clady Water), Dunadry (J194846), (**52**) 30 May 1991; **R. Clady**, Glenone Bridge (C963038), (**1**) 5 June 1990; **R. Glenshesk**, B15 Road Bridge (D126406), (**24**) 30 May 1990; **R. Larne**, Owens Bridge (D378008), (**10**) 6 June 1991; **Ross Burn**, Rossburn (J159973), (**1**) 14 June 2000; **Six Mile Water**, below Ballyclare (J285903), (**36**) 1 June 1990.

DERRY (LONDONDERRY): Cam Burn, Ballynacally Beg (C843212), (**14**) 16 May 2000; **R. Agivey**, Glen Ullin (C792124), (**2**) 16 May 2000; **R. Ballinderry**, Ballinderry Bridge (H927798), (**8**) 25 May 1990; **R. Owenbeg**, Dungiven (C683098), (**1**) 16 June 1990.

FERMANAGH: Lisnabane Burn, Lisnabane Bridge (H379447), (**1**) 24 May 2000; **R. Roogagh** (Glen R.), Garrison (G941518), (**32**) 27 April 1990. **TYRONE: Ballygawley R.** (Ballygawley Water), Lismore Bridge (H630538), (**20**) 11 June 1991; **Foxhill Burn**, Drumcreen (H279529), (**1**) 24 May 2000; **R. Cloghfin**, Ballykeel Bridge (H572671), (**11**) 24 May 2000; **R. Cloghfin**, Black Hill (H512706), (**3**) 24 June 1991; **R. Owenreagh**, Cashel Bridge (H582822), (**1**) 16 June 1991.

PHILOPOTAMIDAE

5. *Philopotamus montanus* (Donovan, 1813)

Previously recorded from Counties Antrim and Fermanagh (King and Halbert, 1910; Hazelton, 1974a, b), *Philopotamus montanus* is widely distributed as elsewhere on the island (Fig. 5). In Fermanagh, larvae have been discovered living in caves.

RIVPACS records

ANTRIM: Douglas Burn, Lynnas Bridge (J227998), (**1**) 14 June and (**2**) 25 October 2000; **Glenariff R.**, Callisnagh Bridge (D224214), (**2**) 30 May and (**2**) 15 August 1990; **Glynn R.**, Glynn (J408999), (**1**) 14 November 1991; **Legnagooly Burn**, Legnagooly Bridge (D132128), (**25**) 25 October 2000; **R. Glenarm**, Glenarm (D310149), (**1**) 15 August and (**1**) 22 November 1990; **Six Mile Water**, Ballyboley Bridge (J315950), (**1**) 12 June and (**3**) 18 September 2000.

DERRY (LONDONDERRY): R. Douglas, Boheradaile (H774967), (**1**) 8 May 2000; **R. Owenalena**, B84 Road Bridge (C743060), (**1**) 5 July 2000.

DOWN: Cassy Water, Cassy Water Bridge (J238149), (**1**) 5 September 1991; **R. Kinnahalla**, upstream New Bridge (J239289), (**5**) 4 September 2000; **R. Shimna**, Tollymore Forest (J353323), (**6**) 20 November 1991.

FERMANAGH: R. Black, Drumkeenagh (H018435), (**6**) 27 April and (**1**) 20 September 1990.

TYRONE: Oughtmame Burn, Oughtmame (H625937), (**1**) 7 August and (**1**) 5 October 2000.

POLYCENTROPIDAE

6. *Cyrnus trimaculatus* (Curtis, 1834)

Previously recorded from Counties Armagh, Derry and Down (King and Halbert, 1910; Murphy and Carter, 1984), *Cyrnus trimaculatus* is widely distributed (Fig. 6).

RIVPACS records

ANTRIM: Dunnstown Burn, Dunnstown (D048095), (**1**) 25 October 2000; **R. Braid**,

Harryville Bridge (D105030), (**8**) 29 October 1990; **R. Clogh**, Glarryford Bridge (D062131), (**1**) 5 November 1990; **R. Crumlin**, Airport Bridge (J192767), (**2**) 8 October 1992; **R. Main** (Killagan Water), Dundermot Bridge (D057130), (**1**) 18 October 1990.

DERRY (LONDONDERRY): R. Moyola, New Bridge (H956905), (**2**) 1 March 1990.

DOWN: R. Lagan, Bulls Brook (J252516), (**4**) 7 March and (**3**) 6 June 1990.

FERMANAGH: Lisnabane Burn, Lisnabane Bridge (H379447), (**1**) 9 November 2000.

TYRONE: R. Ballinderry, Doorless (H835764), (**8**) 9 May 1990; **R. Blackwater**, Moy (H852559), (**5**) 4 April 1990; **R. Cleen**, Kiltermon Bridge (H475482), (**1**) 2 November 2000.

7. *Neureclipsis bimaculata* (Linnaeus, 1758) **First records for Northern Ireland**

Neureclipsis bimaculata was only recorded in Co. Fermanagh (Fig. 7). The species is widespread on the island (O'Connor, 1987).

RIVPACS records

FERMANAGH: R. Finn, Wattle Bridge (H425203), (**2**) 22 July 1990; **R. Sillees**, Drumkeen New Bridge (H230413), (**8**) 16 September 1990.

8. *Plectrocnemia conspersa* (Curtis, 1834)

Previously recorded from Counties Armagh, Down and Tyrone (King and Halbert, 1910; Wilcock, Hildrew and Nichols, 2001), *Plectrocnemia conspersa* is widely distributed (Fig. 8).

RIVPACS records

ANTRIM: Cashel Burn, Downstream Bridge (D173069), (**3**) 25 October 2000; **Doagh R.**, Dunamoy (J260935), (**1**) 25 February 1991; **Doagh R. tributary**, Dixons Corner (J258937), (**3**) 16 May and (**1**) 13 June 2000; **Glynn R.**, Glynn (J408999), (**1**) 20 February 1991; **Six Mile Water**, Ballyboley Bridge (J315950), (**1**) 12 June 2000.

ARMAGH: Kilnasaggart (R.), Kilnasaggart Bridge (J060150), (**1**) 3 April 2000.

DERRY (LONDONDERRY): R. Inver, Inver Bridge (C535010), (**1**) 8 August 2000; **R. Owenalena**, B84 Road Bridge (C743060), (**1**) 16 May 2000; **R. Owenrigh**, Carnanbane (C669067), (**4**) 5 September 1990.

DOWN: Begny Hill Feeder, Woodford Bridge (J289502), (**1**) 22 May 2000; **R. Shankys**, Tornamrock Park (J225255), (**2**) 3 April and (**3**) 21 June 2000.

FERMANAGH: Cooneen Water, Legatillida (H455396), (**3**) 8 November 2000; **R. Black**, Drumkeenagh (H018435), (**5**) 27 April, (**5**) 18 July and (**1**) 20 September 1990; **R. Boho**, Boho (H134445), (**1**) 21 April 1990; **R. Lack**, Croneen (H256665), (**6**) 1 November 2000.

TYRONE: Dreenan Burn, Dreenan Bridge (H212843), (**1**) 9 August 2000; **Glashagh Burn**, Cashel Wood (H615803), (**1**) 12 April 2000; **Gortin Water**, Gortin Bridge (H782792), (**1**) 27 March 2000; **Lissan Water**, Drumgrass Bridge (H806816), (**4**) 14 March 1991 and (**1**)

10 June 1993; **R. Cleen**, Kiltermon Bridge (H475482), (**1**) 26 April 2000; **R. Coolaghty**, Coolaghty (H257673), (**1**) 2 November 2000; **R. Owenkillew**, Broughderg Bridge (H684853), (**1**) 31 July 2000; **R. Owenkillew**, Monanameal Bridge (H613847), (**4**) 7 April 1991.

9. *Plectrocnemia geniculata* McLachlan, 1871

Previously recorded from Co. Fermanagh where larvae were found underground in caves (Hazelton, 1974a, b), the species was only found at one site (Fig. 9).

RIVPACS record

ANTRIM: Glenariff R., Callisnagh Bridge (D224214), (**1**) 30 May 1990.

10. *Polycentropus flavomaculatus* (Pictet, 1834)

Previously recorded from Counties Antrim, Armagh, Down and Fermanagh (King and Halbert, 1910; Fahy, 1972; Murphy and Carter, 1984), *Polycentropus flavomaculatus* is widely distributed (Fig. 10).

RIVPACS records

ANTRIM: Cashel Burn, Downstream Bridge (D173069), (**13**) 26 July and (**4**) 25 October 2000; **Crew Burn**, Carrols Bridge (J134707), (**1**) 22 May 2000; **Doagh R.**, Dunamoy (J260935), (**71**) 6 September 1991; **Doagh R. tributary**, Dixons Corner (J258937), (**1**) 16 May, (**3**) 13 June and (**1**) 18 September 2000; **Dunnstown Burn**, Dunnstown (D048095), (**21**) 25 October 2000; **Glenariff R.**, Callisnagh Bridge (D224214), (**1**) 30 May and (**2**) 15 August 1990; **Glynn R.**, Glynn (J408999), (**1**) 14 November 1991; **Kellswater**, Rock Bridge (J160983), (**1**) 2 August and (**4**) 29 October 1990; **Legnagooly Burn**, Legnagooly Bridge (D132128), (**5**) 16 May, (**4**) 19 June and (**4**) 25 October 2000; **R. Ballinderry**, Corkhill Bridge (H734793), (**15**) 18 November 1991; **R. Braid**, Harryville Bridge (D105030), (**9**) 30 March and (**106**) 29 October 1990; **R. Bush**, Ballyhoe (D077291), (**1**) 30 July and (**8**) 24 October 1991; **R. Bush**, Seneirl Bridge (C942360), (**1**) 21 March, (**26**) 31 July and (**27**) 6 November 1990; **R. Clady** (Clady Water), Dunadry (J194846), (**24**) 22 February, (**2**) 30 May and (**26**) 21 October 1991; **R. Clady**, Glenone Bridge (C963038), (**9**) 2 March, (**24**) 5 June and (**33**) 12 October 1990; **R. Clogh**, Glarryford Bridge (D062131), (**1**) 28 March 1990; **R. Crumlin**, Airport Bridge (J192767), (**2**) 25 May and (**6**) 14 August 1990; **R. Dervock**, Iderown Bridge (D021334), (**1**) 21 March 1990; **R. Glenarm**, Glenarm (D310149), (**1**) 30 May and (**12**) 15 August 1990; **R. Glenshesk**, B15 Road Bridge (D126406), (**1**) 30 May and (**3**) 14 August 1990; **R. Main**, Dunmore Bridge (J087896), (**50**) 2 August and (**56**) 5 November 1990; **Ross Burn**, Rossburn (J159973), (**6**) 25 October 2000; **Six Mile Water**, Ballyboley Bridge (J315950), (**1**) 12 June 2000; **Six Mile Water**, below Ballyclare (J285903), (**1**) 1 June and (**1**) 26 September 1990.

ARMAGH: Forkhill R., Forkhill Lower Bridge (J015157), (**1**) 25 March and (**77**) 23

October 1991; **R. Agivey**, Glen Ullin (C792124), (**34**) 21 September 2000; **R. Callan**, Paper Mill Bridge (H857392), (**8**) 5 April and (**8**) 1 October 1990; **R. Cusher**, Knock Bridge (J039508), (**1**) 2 April, (**1**) 12 June and (**1**) 12 September 1990.

DERRY (LONDONDERRY): R. Aghadowey, White Bridge (C879228), (**4**) 29 May, (**1**) 13 August and (**32**) 30 October 1990; **R. Ballinderry**, Ballinderry Bridge (H927798), (**2**) 13 August and (**3**) 2 November 1990; **R. Ballinderry**, Corkhill Bridge (H734793), (**1**) 14 March 1991; **R. Moyola**, New Bridge (H956905), (**2**) 5 June and (**4**) 27 September 1990; **R. Owenbeg**, Dungiven (C683098), (**2**) 11 April, (**17**) 16 June and (**72**) 5 September 1990; **R. Owenrigh**, Carnanbane (C669067), (**5**) 5 September 1990; **R. Roe**, Corick Bridge (C751063), (**5**) 5 September 1990.

DOWN: Begny Hill Feeder, Woodford Bridge (J289502), (**1**) 22 May 2000; **Cassy Water**, Cassy Water Bridge (J238149), (**2**) 5 September 1991; **R. Annacloy**, Annacloy Bridge (J448484), (**2**) 16 March and (**64**) 2 October 1990; **R. Annalong**, Annalong Bridge (J374198), (**2**) 6 March and (**4**) 24 October 1991; **R. Kinnahalla**, upstream New Bridge (J239289), (**1**) 21 June 2000; **R. Shankys**, Tornamrock Park (J225255), (**1**) 3 April, (**3**) 21 June and (**9**) 4 September 2000; **Upper Bann**, Ballydown (J138450), (**1**) 20 March and (**4**) 12 June 1990, (**15**) 24 September 1992; **Upper Bann**, Hilltown (J218291), (**1**) 8 June and (**3**) 25 September 1990.

FERMANAGH: Cooneen Water, Legatillida (H455396), (**8**) 7 August and (**5**) 8 November 2000; **Foxhill Burn**, Drumcreen (H279529), (**2**) 15 August and (**6**) 10 November 2000; **Lisnabane Burn**, Lisnabane Bridge (H379447), (**4**) 24 May, (**16**) 10 August and (**15**) 9 November 2000; **R. Arney**, Brockagh (H175375), (**4**) 25 April and (**19**) 21 July 1990; **R. Ballinamallard**, Magheracross (H281537), (**3**) 19 September 1990; **R. Bannagh**, Bannagh Bridge (H162654), (**16**) 20 April, (**12**) 20 July and (**5**) 24 October 1990; **R. Black**, Drumkeenagh (H018435), (**1**) 27 April, (**2**) 18 July and (**6**) 20 September 1990; **R. Colebrooke**, Tullyreagh Cross (H378441), (**1**) 19 April and (**4**) 17 September 1990; **R. Finn**, Wattle Bridge (H425203), (**11**) 22 July and (**3**) 22 October 1990; **R. Glendurragh**, Ederny (H222652), (**1**) 24 July and (**3**) 21 September 1990; **R. Lack**, Croneen (H256665), (**7**) 12 August 2000; **R. Roogagh** (Glen R.), Garrison (G941518), (**24**) 27 April, (**48**) 18 July and (**48**) 20 September 1990; **R. Sillees**, Derrygonnelly (H118521), (**20**) 21 April, (**16**) 19 July and (**4**) 23 October 1990; **R. Sillees**, Drumkeen New Bridge (H230413), (**16**) 23 April and (**32**) 16 July and (**32**) 16 September 1990; **R. Termon**, Killynoogan (H111659), (**8**) 20 April, (**8**) 20 July and (**3**) 24 October 1990.

TYRONE: Ballygawley R. (Ballygawley Water), Lismore Bridge (H630538), (**1**) 26 February and (**6**) 22 October 1991; **Ballynahatty Water** (R. Owenreagh), Ballynahatty (H437673), (**17**) 8 April, (**50**) 20 June and (**4**) 2 September 1990; **Dreenan Burn**, Dreenan

Bridge (H212843), (**4**) 9 August and (**1**) 15 November 2000; **Dunnyboe Burn**, Dunnyboe Bridge (H459993), (**4**) 24 October 2000; **Fairywater**, Mullanatoomog (H392766), (**1**) 7 August and (**1**) 12 November 1990; **Fury R.**, Belalastera Bridge (H552517), (**2**) 26 February, (**4**) 11 June and (**60**) 27 October 1991; **Glashagh Burn**, Cashel Wood (H615803), (**1**) 12 April, (**30**) 31 July and (**3**) 2 October 2000; **Gortin Water**, Gortin Bridge (H782792), (**1**) 27 March, (**1**) 3 July and (**1**) 26 September 2000; **Granagh Burn**, Carrickmore (H604721), (**1**) 5 April and (**3**) 26 July 2000; **Lissan Water**, Drumgrass Bridge (H806816), (**4**) 14 March 1991 and (**2**) 10 June 1993; **Oughtmame Burn**, Oughtmame (H625937), (**1**) 7 August 2000; **R. Ballinderry**, Doorless (H835764), (**1**) 30 July and (**2**) 2 October 1990; **R. Blackwater**, Caledon Bridge (H759446), (**3**) 26 September 1991; **R. Blackwater**, Derrymeen Bridge (H625530), (**3**) 22 October 1991; **R. Camowen**, Donnelly's Bridge (H464730), (**8**) 8 April and (**11**) 3 September 1990; **R. Cleen**, Kiltermon Bridge (H475482), (**12**) 26 April, (**26**) 7 August and (**20**) 2 November 2000; **R. Cloghfin**, Ballykeel Bridge (H572671), (**5**) 27 July 2000; **R. Cloghfin**, Black Hill (H512706), (**1**) 14 April and (**16**) 12 September 1991; **R. Coolaghty**, Coolaghty (H257673), (**3**) 22 March, (**12**) 12 August and (**6**) 2 November 2000; **R. Derg**, Aghyaran Bridge (H191806), (**1**) 6 August and (**99**) 6 September 1990; **R. Derg**, Crewe Bridge (H315845), (**17**) 22 May and (**1**) 12 November 1990; **R. Glenelly**, Clougherny Bridge (H563913), (**1**) 21 May 1990; **R. Owenkillew**, Broughderg Bridge (H684853), (**4**) 12 April, (**10**) 31 July and (**6**) 2 October 2000; **R. Owenkillew**, Killymore Bridge (H438873), (**1**) 18 June and (**2**) 7 September 1990; **R. Owenkillew**, Monanameal Bridge (H613847), (**1**) 7 April and (**179**) 7 October 1991; **R. Owenreagh**, B84 Road Bridge (H330658), (**2**) 21 July and (**1**) 25 November 2000; **R. Owenreagh**, Cashel Bridge (H582822), (**1**) 16 June and (**43**) 8 October 1991; **R. Strule**, Moyle Bridge (H411861) (**8**) 9 April, (**3**) 18 June and (**2**) 3 September 1990; **Tullynadall Burn**, Tullynadall (H447906), (**3**) 10 August and (**2**) 5 October 2000.

11. *Polycentropus irroratus* (Curtis, 1835) **First records for Northern Ireland**

Polycentropus irroratus is a rare species compared with *P. flavomaculatus* and only reported from four sites (Fig. 11). However, the species is widespread on the island (O'Connor, 1987).

RIVPACS records

ARMAGH: Forkhill R., Forkhill Lower Bridge (J015157), (**11**) 23 October 1991.

DERRY (LONDONDERRY): R. Moyola, New Bridge (H956905), (**1**) 5 June 1990.

FERMANAGH: Foxhill Burn, Drumcreen (H279529), (**2**) 10 November 2000; **R. Arney**, Brockagh (H175375), (**1**) 25 April 1990.

12. *Polycentropus kingi* McLachlan, 1881

Previously recorded from Co. Antrim (King and Halbert, 1910), *Polycentropus kingi* was only recorded from four sites (Fig. 12).

RIVPACS records

ANTRIM: Douglas Burn, Lynnas Bridge (J227998), (**4**) 16 May and (**3**) 14 June 2000; **R. Glenarm**, Glenarm (D310149), (**1**) 30 May 1990.

DOWN: R. Annalong, Annalong Bridge (J374198), (**2**) 23 May 1991; **R. Shimna**, Tollymore Forest (J353323), (**1**) 23 May 1991.

PSYCHOMYIIDAE

13. *Psychomyia pusilla* (Fabricius, 1781)

Previously recorded from Counties Antrim, Armagh and Derry (King and Halbert, 1910; Murphy and Carter, 1984), *Psychomyia pusilla* is widely distributed (Fig. 13).

RIVPACS records

ANTRIM: Dunnstown Burn, Dunnstown (D048095), (**11**) 16 May 2000; **Kellswater**, Rock Bridge (J160983), (**8**) 2 August 1990; **R. Clady**, Glenone Bridge (C963038), (**4**) 5 June 1990.

ARMAGH: R. Callan, Paper Mill Bridge (H857392), (**2**) 3 July 1990.

DERRY (LONDONDERRY): R. Agivey, Glen Ullin (C792124), (**6**) 16 May 2000; **R. Ballinderry**, Ballinderry Bridge (H927798), (**18**) 25 May and (**3**) 2 November 1990.

FERMANAGH: Cooneen Water, Legatillida (H455396), (**2**) 8 November 2000; **Foxhill Burn**, Drumcreen (H279529), (**1**) 24 May and (**1**) 10 November 2000; **Lisnabane Burn**, Lisnabane Bridge (H379447), (**17**) 24 May and (**1**) 9 November 2000; **R. Colebrooke**, Tullyreagh Cross (H378441), (**1**) 17 September 1990; **R. Roogagh** (Glen R.), Garrison (G941518), (**1**) 27 April 1990.

TYRONE: Ballygawley R. (Ballygawley Water), Lismore Bridge (H630538), (**3**) 11 June and (**4**) 22 October 1991; **Ballynahatty Water** (R. Owenreagh), Ballynahatty (H437673), (**1**) 8 April and (**19**) 20 June 1990; **Fury R.**, Belalastera Bridge (H552517), (**2**) 26 February and (**4**) 22 October 1991; **R. Ballinderry**, Doorless (H835764), (**1**) 2 October 1990; **R. Camowen**, Donnelly's Bridge (H464730), (**1**) 21 June 1990; **R. Cloghfin**, Black Hill (H512706), (**1**) 24 June and (**40**) 12 September 1991; **R. Derg**, Aghyaran Bridge (H191806), (**25**) 9 April 1990; **R. Derg**, Crewe Bridge (H315845), (**1**) 22 May 1990; **R. Strule**, Moyle Bridge (H411861), (**2**) 18 June 1990; **R. Owenreagh**, B84 Road Bridge (H330658), (**1**) 24 May 2000.

14. *Tinodes waeneri* (Linnaeus, 1758)

Previously recorded from Counties Antrim, Armagh, Derry, Down and Fermanagh (McLachlan, 1885; King and Halbert, 1910; Murphy and Carter, 1984; O'Connor, Bond and

O'Connor, 2013), *Tinodes waeneri* is widely distributed (Fig. 14).

RIVPACS records

ANTRIM: Crew Burn, Carrols Bridge (J134707), (**7**) 22 May 2000; **R. Clogh**, Glarryford Bridge (D062131), (**1**) 5 November 1990; **R. Crumlin**, Airport Bridge (J192767), (**2**) 14 August 1990 and (**3**) 8 October 1992; **R. Main**, Dunmore Bridge (J087896), (**8**) 5 November 1990.

DERRY (LONDONDERRY): R. Aghadowey, White Bridge (C879228), (**4**) 29 May and (**1**) 13 August 1990; **R. Owenbeg**, Dungiven (C683098), (**8**) 11 April and (**8**) 5 September 1990.

DOWN: R. Annacloy, Annacloy Bridge (J448484), (**1**) 10 July 1990; **R. Annalong**, Annalong Bridge (J374198), (**4**) 6 March, (**1**) 23 May and (**40**) 24 October 1991; **R. Lagan**, Bulls Brook (J252516), (**1**) 7 March and (**2**) 6 June 1990; **R. Mullagh**, Mullagh Bridge (J332160), (**6**) 22 May and (**1**) 17 July 2000; **R. Shankys**, Tornamrock Park (J225255), (**1**) 3 April and (**1**) 21 June 2000; **Upper Bann**, Ballydown (J138450), (**8**) 20 March 1990 and (**8**) 24 September 1992.

TYRONE: Black Water, Carrickaness Bridge (H297743), (**1**) 10 April 2000; **Tullynadall Burn**, Tullynadall (H447906), (**1**) 5 October 2000.

HYDROPSYCHIDAE

15. *Cheumatopsyche lepida* (Pictet, 1834) **First record for Northern Ireland**

Cheumatopsyche lepida was only collected at one site (Fig. 15). However, the species is widespread on the island (O'Connor, 1987).

RIVPACS record

TYRONE: R. Strule, Moyle Bridge (H411861), (**2**) 18 June 1990.

16. *Hydropsyche angustipennis* (Curtis, 1834) **First records for Northern Ireland**

Hydropsyche angustipennis is widely distributed (Fig. 16).

RIVPACS records

ANTRIM: R. Bush, Seneirl Bridge (C942360), (**129**) 21 March, (**10**) 31 July and (**18**) 6 November 1990; **R. Main** (Killagan Water), Dundermot Bridge (D057130), (**16**) 28 March and (**24**) 18 October 1990.

ARMAGH: R. Cusher, Knock Bridge (J039508), (**8**) 2 April, (**1**) 12 June and (**16**) 12 September 1990.

DOWN: Newry R., Carnmeen (J075303), (**72**) 13 March 1990.

FERMANAGH: Lisblake Burn, Brockagh (H169373), (**1**) 27 April and (**5**) 10 November 2000; **Lisnabane Burn**, Lisnabane Bridge (H379447), (**1**) 9 November 2000; **R. Boho**, Boho

(H134445), (**1**) 16 July 1990; **R. Colebrooke**, Tullyreagh Cross (H378441), (**29**) 17 September 1990; **R. Finn**, Wattle Bridge (H425203), (**1**) 22 July and (**1**) 22 October 1990; **R. Sillees**, Drumkeen New Bridge (H230413), (**128**) 16 July and (**56**) 16 September 1990.

TYRONE: Eskragh Water (Quiggery Water), Seskinore Mill Bridge (H472635), (**8**) 28 February 1991; **Fairywater**, Mullanatoomog (H392766), (**50**) 7 August and (**32**) 12 November 1990; **R. Blackwater**, Caledon Bridge (H759446), (**9**) 27 March, (**2**) 11 June and (**272**) 26 September 1991; **Quiggery Water**, Edergoole Bridge (H449678), (**2**) 2 September 1990.

17. *Hydropsyche instabilis* (Curtis, 1834)

Previously recorded from the River Clogh in Co. Antrim (Carter and Wood, 1995), *Hydropsyche instabilis* is widely distributed (Fig. 17).

RIVPACS records

ANTRIM: Cashel Burn, Downstream Bridge (D173069), (**1**) 15 May and (**4**) 25 October 2000; **Crew Burn**, Carrols Bridge (J134707), (**1**) 22 May 2000; **Doagh R. tributary**, Dixons Corner (J258937), (**6**) 16 May, (**8**) 13 June and (**11**) 18 September 2000; **Douglas Burn**, Lynnas Bridge (J227998), (**1**) 25 October 2000; **Glenariff R.**, Callisnagh Bridge (D224214), (**30**) 30 May and (**6**) 15 August 1990; **Glynn R.**, Glynn (J408999), (**2**) 20 February, (**16**) 6 June and (**32**) 14 November 1991; **Legnagooly Burn**, Legnagooly Bridge (D132128), (**36**) 16 May, (**26**) 19 June and (**42**) 25 October 2000; **R. Bush**, Ballyhoe (D077291), (**7**) 15 May and (**8**) 24 October 1991; **R. Clady** (Clady Water), Dunadry (J194846), (**4**) 22 February 1991; **Ross Burn**, Rossburn (J159973), (**8**) 22 May, (**8**) 14 June and (**18**) 25 October 2000; **Six Mile Water**, Ballyboley Bridge (J315950), (**60**) 16 May and (**16**) 12 June 2000.

DERRY (LONDONDERRY): R. Agivey, Glen Ullin (C792124), (**1**) 16 May 2000; **R. Douglas**, Boheradaile (H774967), (**21**) 16 October 2000; **R. Owenalena**, B84 Road Bridge (C743060), (**2**) 16 May 2000; **R. Owenrigh**, Carnanbane (C669067), (**1**) 16 June 1990 and (**1**) 7 April 1991.

FERMANAGH: Cooneen Water, Legatillida (H455396), (**8**) 30 April and (**12**) 8 November 2000; **Foxhill Burn**, Drumcreen (H279529), (**15**) 10 November 2000; **R. Arney**, Brockagh (H175375), (**4**) 25 April 1990; **R. Black**, Drumkeenagh (H018435), (**23**) 27 April, (**3**) 18 July and (**10**) 20 September 1990; **R. Lack**, Croneen (H256665), (**2**) 1 November 2000.

TYRONE: Black Water, Carrickaness Bridge (H297743), (**4**) 15 November 2000; **Fury R.**, Belalastera Bridge (H552517), (**4**) 11 June and (**12**) 27 October 1991; **Lissan Water**, Drumgrass Bridge (H806816), (**96**) 14 March and (**4**) 18 November 1991, (**5**) 10 June 1993; **R. Coolaghty**, Coolaghty (H257673), (**4**) 22 March and (**5**) 2 November 2000; **R. Owenreagh**, B84 Road Bridge (H330658), (**2**) 25 November 2000.

18. *Hydropsyche pellucidula* (Curtis, 1834) **First records for Northern Ireland**

Hydropsyche pellucidula is widely distributed (Fig. 18).

RIVPACS records

ANTRIM: Coopers Water, Boomers Bridge (J216757), (**2**) 6 September 2000; **Doagh R.**, Dunamoy (J260935), (**8**) 25 February and (**2**) 6 September 1991; **Doagh R. tributary**, Dixons Corner (J258937), (**2**) 18 September 2000; **Douglas Burn**, Lynnas Bridge (J227998), (**2**) 16 May and (**3**) 25 October 2000; **Dunnstown Burn**, Dunnstown (D048095), (**4**) 25 October 2000; **Glenariff R.**, Callisnagh Bridge (D224214), (**4**) 19 November 1990; **Glynn R.**, Glynn (J408999), (**1**) 20 February and (**16**) 14 November 1991; **Granagh Burn**, Carrickmore (H604721), (**1**) 5 April 2000; **Kellswater**, Rock Bridge (J160983), (**48**) 30 March, (**147**) 2 August and (**38**) 29 October 1990; **Legnagooly Burn**, Legnagooly Bridge (D132128), (**43**) 25 October 2000; **R. Blackwater**, Caledon Bridge (H759446), (**1**) 27 March and (**9**) 11 June 1991; **R. Bush**, Seneirl Bridge (C942360), (**1**) 21 March and (**48**) 31 July 1990; **R. Clady** (Clady Water), Dunary (J194846), (**17**) 21October 1991; **R. Clady**, Glenone Bridge (C963038), (**52**) 2 March, (**12**) 5 June and (**15**) 12 October 1990; **R. Clogh**, Glarryford Bridge (D062131), (**32**) 28 March and (**8**) 5 November 1990; **R. Dervock**, Iderown Bridge (D021334), (**68**) 21 March, (**8**) 31 July and (**8**) 6 November 1990; **R. Glenarm**, Glenarm (D310149), (**8**) 30 May, (**44**) 15 August and (**4**) 22 November 1990; **R. Glenshesk**, B15 Road Bridge (D126406), (**4**) 14 August and (**2**) 19 November 1990; **R. Main**, Dunmore Bridge (J087896), (**16**) 28 March, (**10**) 2 August and (**8**) 5 November 1990; **Ross Burn**, Rossburn (J159973), (**1**) 22 May 2000.

ARMAGH: Forkhill R., Forkhill Lower Bridge (J015157), (**8**) 25 March 1991; **Kilnasaggart (R.)**, Kilnasaggart Bridge (J060150), (**16**) 3 April and (**2**) 23 October 2000; **R. Callan**, Paper Mill Bridge (H857392), (**64**) 5 April, (**4**) 3 July and (**116**) 1 October 1990.

DERRY (LONDONDERRY): R. Aghadowey, White Bridge (C879228), (**4**) 13 August and (**144**) 30 October 1990; **R. Ballinderry**, Ballinderry Bridge (H927798), (**348**) 13 August and (**26**) 2 November 1990; **R. Douglas**, Boheradaile (H774967), (**1**) 16 October 2000; **R. Faughan**, Ardmore (C474134), (**12**) 5 August and (**2**) 11 November 1990; **R. Mayoghill**, Caheny Bridge (C889191), (**1**) 16 May and (**21**) 21 September 2000; **R. Owenalena**, B84 Road Bridge (C743060), (**6**) 26 September 2000; **R. Owenbeg**, Dungiven (C683098), (**16**) 11 April and (**8**) 5 September 1990; **R. Owenrigh**, Carnanbane (C669067), (**4**) 5 September 1990; **R. Roe**, Corick Bridge (C751063), (**4**) 11 April and (**4**) 5 September 1990.

DOWN: Cassy Water, Cassy Water Bridge (J238149), (**7**) 5 September 1991; **Newry R.**, Carnmeen (J075303), (**71**) 13 March and (**1**) 13 September 1990; **R. Annacloy**, Annacloy Bridge (J448484), (**8**) 10 July and (**44**) 2 October 1990; **Upper Bann**, Hilltown (J218291), (**12**) 12 March and (**17**) 25 September 1990.

FERMANAGH: Cooneen Water, Legatillida (H455396), (**4**) 30 April, (**11**) 7 August and (**17**) 8 November 2000; **Foxhill Burn**, Drumcreen (H279529), (**1**) 24 May, (**13**) 15 August and (**18**) 10 November 2000; **Lisblake Burn**, Brockagh (H169373), (**1**) 27 April 2000; **Lisnabane Burn**, Lisnabane Bridge (H379447), (**9**) 10 August 2000; **R. Arney**, Brockagh (H175375), (**75**) 25 April, (**129**) 21 July and (**388**) 18 September 1990; **R. Ballinamallard**, Magheracross (H281537), (**9**) 22 April, (**12**) 25 July and (**2**) 19 September 1990; **R. Bannagh**, Bannagh Bridge (H162654), (**4**) 20 April and (**8**) 24 October 1990; **R. Black**, Drumkeenagh (H018435), (**23**) 27 April and (**10**) 20 September 1990; **R. Colebrooke**, Tullyreagh Cross (H378441), (**1**) 19 April and (**3**) 17 September 1990; **R. Garvary**, Larkhill (H009630), (**8**) 20 April and (**8**) 25 October 1990; **R. Glendurragh**, Ederny (H222652), (**16**) 26 April, (**32**) 24 July and (**3**) 21 September 1990; **R. Lack**, Croneen (H256665), (**1**) 12 August 2000; **R. Roogagh** (Glen R.), Garrison (G941518), (**1**) 18 July and (**2**) 20 September 1990; **R. Sillees**, Derrygonnelly (H118521), (**16**) 21 April, (**1**) 19 July and (**16**) 23 October 1990.

TYRONE: Ballygawley R. (Ballygawley Water), Lismore Bridge (H630538), (**32**) 26 February, (**38**) 11 June and (**97**) 22 October 1991; **Ballynahatty Water** (R. Owenreagh), Ballynahatty (H437673), (**9**) 8 April, (**2**) 20 June and (**82**) 2 September 1990; **Black Water**, Carrickaness Bridge (H297743), (**4**) 15 November 2000; **Eskragh Water** (Quiggery Water), Seskinore Mill Bridge (H472635), (**1**) 28 February 1991; **Fairywater**, Mullanatoomog (H392766), (**50**) 7 August and (**8**) 12 November 1990; **Fury R.**, Belalastera Bridge (H552517), (**6**) 26 February and (**4**) 27 October 1991; **Glashagh Burn**, Cashel Wood (H615803), (**1**) 12 April 2000; **Granagh Burn**, Carrickmore (H604721), (**4**) 26 July and (**3**) 13 November 2000; **Oughtmame Burn**, Oughtmame (H625937), (**1**) 17 April 2000; **R. Blackwater**, Caledon Bridge (H759446), (**1**) 27 March, (**9**) 11 June and (**146**) 26 September 1991; **R. Blackwater**, Derrymeen Bridge (H625530), (**53**) 26 February and (**29**) 22 October 1991; **R. Camowen**, Donnelly's Bridge (H464730), (**1**) 3 September 1990; **R. Cleen**, Kiltermon Bridge (H475482), (**1**) 2 November 2000; **R. Cloghfin**, Black Hill (H512706), (**3**) 14 April and (**124**) 12 September 1991; **R. Derg**, Aghyaran Bridge (H191806), (**1**) 6 September 1990; **R. Derg**, Crewe Bridge (H315845), (**16**) 6 August and (**1**) 12 November 1990; **R. Glenelly**, Clougherny Bridge (H563913), (**123**) 6 August and (**2**) 13 November 1990; **R. Owenkillew**, Killymore Bridge (H438873), (**33**) 7 September 1990; **R. Owenkillew**, Monanameal Bridge (H613847), (**1**) 7 April and (**1**) 7 October 1991; **R. Owenreagh**, Cashel Bridge (H582822), (**8**) 7 April and (**205**) 8 October 1991; **R. Strule**, Moyle Bridge (H411861), (**3**) 3 September 1990; **Quiggery Water**, Edergoole Bridge (H449678), (**10**) 8 April and (**32**) 2 September 1990; **Tullynadall Burn**, Tullynadall (H447906), (**1**) 5 October 2000.

19. *Hydropsyche siltalai* Döhler, 1963

Previously recorded from the River Clogh in Co. Antrim (Carter and Wood, 1995), *Hydropsyche siltalai* is widely distributed (Fig. 19).

RIVPACS records

ANTRIM: Cashel Burn, Downstream Bridge (D173069), (**15**) 15 May, (**4**) 26 July and (**20**) 25 October 2000; **Coopers Water**, Boomers Bridge (J216757), (**2**) 6 September 2000; **Doagh R.**, Dunamoy (J260935), (**8**) 25 February, (**2**) 5 June and (**96**) 6 September 1991; **Doagh R. tributary**, Dixons Corner (J258937), (**11**) 16 May, (**5**) 13 June and (**5**) 18 September 2000; **Douglas Burn**, Lynnas Bridge (J227998), (**39**) 16 May, (**9**) 14 June and (**31**) 25 October 2000; **Dunnstown Burn**, Dunnstown (D048095), (**1**) 16 May and (**65**) 25 October 2000; **Glenariff R.**, Callisnagh Bridge (D224214), (**30**) 30 May 1990; **Glynn R.**, Glynn (J408999), (**1**) 20 February and (**40**) 14 November 1991; **Kellswater**, Rock Bridge (J160983), (**280**) 30 March, (**7**) 2 August and (**38**) 29 October 1990; **Legnagooly Burn**, Legnagooly Bridge (D132128), (**7**) 16 May, (**16**) 19 June and (**43**) 25 October 2000; **R. Blackwater**, Caledon Bridge (H759446), (**4**) 27 March and (**24**) 26 September 1991; **R. Blackwater**, Derrymeen Bridge (H625530), (**5**) 26 February, (**1**) 11 June and (**52**) 22 October 1991; **R. Braid**, Harryville Bridge (D105030), (**1**) 30 March and (**1**) 29 October 1990; **R. Bush**, Ballyhoe (D077291), (**17**) 15 May, (**1**) 30 July and (**24**) 24 October 1991; **R. Bush**, Seneirl Bridge (C942360), (**41**) 21 March and (**8**) 6 November 1990; **R. Clady** (Clady Water), Dunadry (J194846), (**4**) 22 February, (**3**) 30 May and (**97**) 21 October 1991; **R. Clady**, Glenone Bridge (C963038), (**44**) 2 March and (**12**) 5 June 1990; **R. Clogh**, Glarryford Bridge (D062131), (**8**) 28 March and (**8**) 5 November 1990; **R. Crumlin**, Airport Bridge (J192767), (**1**) 8 October 1992; **R. Dervock**, Iderown Bridge (D021334), (**477**) 21 March, (**8**) 31 July and (**56**) 6 November 1990; **R. Glenarm**, Glenarm (D310149), (**64**) 30 May, (**4**) 15 August and (**18**) 22 November 1990; **R. Glenshesk**, B15 Road Bridge (D126406), (**1**) 30 May, (**12**) 14 August and (**2**) 19 November 1990; **R. Larne**, Owens Bridge (D378008), (**8**) 6 June and (**60**) 14 November 1991; **R. Main**, Dunmore Bridge (J087896), (**160**) 28 March, (**50**) 2 August and (**24**) 5 November 1990; **R. Main** (Killagan Water), Dundermot Bridge (D057130), (**1**) 28 March 1990; **Ross Burn**, Rossburn (J159973), (**19**) 22 May, (**19**) 14 June and (**21**) 25 October 2000; **Six Mile Water**, Ballyboley Bridge (J315950), (**22**) 16 May, (**56**) 12 June and (**136**) 18 September 2000; **Six Mile Water**, below Ballyclare (J285903), (**4**) 6 March and (**83**) 26 September 1990.

ARMAGH: Forkhill R., Forkhill Lower Bridge (J015157), (**176**) 25 March and (**80**) 23 October 1991; **Kilnasaggart (R.)**, Kilnasaggart Bridge (J060150), (**13**) 3 April and (**21**) 23 October 2000; **R. Callan**, Paper Mill Bridge (H857392), (**8**) 5 April, (**4**) 3 July and (**116**) 1 October 1990; **R. Cusher**, Knock Bridge (J039508), (**16**) 12 June 1990.

DERRY (LONDONDERRY): Cam Burn, Ballynacally Beg (C843212), (**4**) 16 May 2000; **Miltown Burn**, A29 Road Bridge (H848997), (**1**) 8 May 2000; **R. Aghadowey**, White Bridge (C879228), (**4**) 29 May, (**4**) 13 August and (**144**) 30 October 1990; **R. Agivey**, Glen Ullin (C792124), (**17**) 16 May and (**11**) 29 June 2000; **R. Ballinderry**, Ballinderry Bridge (H927798), (**145**) 25 May, (**72**) 13 August and (**2**) 2 November 1990; **R. Ballinderry**, Corkhill Bridge (H734793), (**8**) 14 March and (**20**) 18 November 1991; **R. Douglas**, Boheradaile (H774967), (**7**) 8 May and (**30**) 16 October 2000; **R. Faughan**, Ardmore (C474134), (**24**) 20 May and (**7**) 11 November 1990; **R. Inver**, Inver Bridge (C535010), (**5**) 26 April 2000; **R. Mayoghill**, Caheny Bridge (C889191), (**25**) 16 May, (**3**) 29 June and (**90**) 21 September 2000; **R. Owenalena**, B84 Road Bridge (C743060), (**19**) 16 May, (**5**) 5 July and (**4**) 26 September 2000; **R. Owenbeg**, Dungiven (C683098), (**104**) 11 April, (**34**) 16 June and (**48**) 5 September 1990; **R. Owenrigh**, Carnanbane (C669067), (**5**) 16 June and (**9**) 5 September 1990, (**6**) 7 April 1991; **R. Roe**, Corick Bridge (C751063), (**4**) 11 April and (**5**) 5 September 1990.

DOWN: Begny Hill Feeder, Woodford Bridge (J289502), (**14**) 22 May and (**9**) 7 June 2000; **Cassy Water**, Cassy Water Bridge (J238149), (**3**) 20 May 1990, (**1**) 21 February and (**59**) 5 September 1991; **Newry R.**, Carnmeen (J075303), (**71**) 13 March and (**2**) 14 June 1990; **R. Annacloy**, Annacloy Bridge (J448484), (**2**) 16 March, (**8**) 10 July and (**44**) 2 October 1990; **R. Annalong**, Annalong Bridge (J374198), (**60**) 6 March, (**28**) 23 May and (**24**) 24 October 1991; **R. Kinnahalla**, upstream New Bridge (J239289), (**7**) 22 May, (**27**) 21 June and (**6**) 4 September 2000; **R. Mullagh**, Mullagh Bridge (J332160), (**16**) 22 May and (**132**) 1 November 2000; **R. Shankys**, Tornamrock Park (J225255), (**10**) 3 April and (**3**) 21 June 2000; **R. Shimna**, Tollymore Forest (J353323), (**2**) 11 March and (**18**) 20 November 1991; **Spences R.**, Glassdrumman Bridge (J377228), (**4**) 22 May, (**9**) 5 June and (**17**) 1 November 2000; **Upper Bann**, Ballydown (J138450), (**20**) 20 March and (**64**) 12 June 1990, (**217**) 24 September 1992; **Upper Bann**, Hilltown (J218291), (**376**) 12 March, (**27**) 8 June and (**491**) 25 September 1990.

FERMANAGH: Cooneen Water, Legatillida (H455396), (**4**) 30 April and (**7**) 8 November 2000; **Foxhill Burn**, Drumcreen (H279529), (**60**) 24 May and (**100**) 10 November 2000; **Lisnabane Burn**, Lisnabane Bridge (H379447), (**1**) 24 May and (**1**) 9 November 2000; **R. Ballinamallard**, Magheracross (H281537), (**40**) 22 April and (**2**) 19 September 1990; **R. Bannagh**, Bannagh Bridge (H162654), (**20**) 20 April and (**34**) 24 October 1990; **R. Black**, Drumkeenagh (H018435), (**8**) 27 April 1990; **R. Colebrooke**, Tullyreagh Cross (H378441), (**26**) 17 September 1990; **R. Garvary**, Larkhill (H009630), (**36**) 20 April, (**8**) 23 July and (**24**) 25 October 1990; **R. Glendurragh**, Ederny (H222652), (**12**) 26 April 1990; **R. Lack**, Croneen (H256665), (**1**) 12 August and (**2**) 1 November 2000; **R. Roogagh** (Glen R.), Garrison (G941518), (**24**) 27 April, (**8**) 18 July and (**25**) 20 September 1990; **R. Sillees**, Derrygonnelly

(H118521), (**16**) 21 April, (**2**) 19 July and (**48**) 23 October 1990; **R. Termon**, Killynoogan (H111659), (**4**) 24 October 1990.

TYRONE: Ballygawley R. (Ballygawley Water), Lismore Bridge (H630538), (**16**) 26 February, (**60**) 11 June and (**61**) 22 October 1991; **Black Water**, Carrickaness Bridge (H297743), (**2**) 15 November 2000; **Dreenan Burn**, Dreenan Bridge (H212843), (**1**) 28 March and (**3**) 15 November 2000; **Dunnyboe Burn**, Dunnyboe Bridge (H459993), (**9**) 19 April and (**5**) 24 October 2000; **Eskragh Water** (Quiggery Water), Seskinore Mill Bridge (H472635), (**3**) 3 October 1991; **Fairywater**, Mullanatoomog (H392766), (**67**) 23 May and (**16**) 12 November 1990; **Fury R.**, Belalastera Bridge (H552517), (**8**) 11 June 1991; **Glashagh Burn**, Cashel Wood (H615803), (**1**) 12 April, (**1**) 31 July and (**1**) 2 October 2000; **Gortin Water**, Gortin Bridge (H782792), (**3**) 27 March, (**1**) 3 July and (**28**) 26 September 2000; **Granagh Burn**, Carrickmore (H604721), (**9**) 5 April and (**6**) 13 November 2000; **Lissan Water**, Drumgrass Bridge (H806816), (**16**) 14 March and (**8**) 18 November 1991; **Oughtmame Burn**, Oughtmame (H625937), (**6**) 17 April and (**20**) 5 October 2000; **R. Ballinderry**, Doorless (H835764), (**2**) 2 October 1990; **R. Blackwater**, Caledon Bridge (H759446), (**1**) 27 March 1991; **R. Blackwater**, Derrymeen Bridge (H625530), (**5**) 26 February and (**52**) 22 October 1991; **R. Camowen**, Donnelly's Bridge (H464730), (**59**) 8 April, (**2**) 21 June and (**196**) 3 September 1990; **R. Cloghfin**, Ballykeel Bridge (H572671), (**3**) 13 November 2000; **R. Cloghfin**, Black Hill (H512706), (**80**) 14 April, (**34**) 24 June and (**124**) 12 September 1991; **R. Coolaghty**, Coolaghty (H257673), (**1**) 22 March and (**1**) 2 November 2000; **R. Derg**, Aghyaran Bridge (H191806), (**19**) 9 April, (**105**) 6 August and (**8**) 6 September 1990; **R. Derg**, Crewe Bridge (H315845), (**66**) 22 May and (**65**) 12 November 1990; **R. Glenelly**, Clougherny Bridge (H563913), (**92**) 21 May and (**25**) 13 November 1990; **R. Owenkillew**, Killymore Bridge (H438873), (**2**) 10 April, (**1**) 18 June and (**33**) 7 September 1990; **R. Owenkillew**, Monanameal Bridge (H613847), (**4**) 7 April, (**1**) 30 June and (**8**) 7 October 1991; **R. Owenreagh**, B84 Road Bridge (H330658), (**1**) 25 November 2000; **R. Owenreagh**, Cashel Bridge (H582822), (**22**) 7 April 1991, (**18**) 16 June and (**205**) 8 October 1991; **R. Strule**, Moyle Bridge (H411861), (**248**) 9 April, (**42**) 18 June and (**26**) 3 September 1990; **Quiggery Water**, Edergoole Bridge (H449678), (**18**) 8 April and (**16**) 2 September 1990; **Tullynadall Burn**, Tullynadall (H447906), (**7**) 19 April and (**63**) 5 October 2000.

GOERIDAE

20. *Goera pilosa* (Fabricius, 1775)

Previously recorded from Co. Armagh (King and Halbert, 1910), *Goera pilosa* was only found at six sites in the south-west (Fig. 20).

RIVPACS records

FERMANAGH: R. Colebrooke, Tullyreagh Cross (H378441), (**1**) 17 September 1990; **R. Finn**, Wattle Bridge (H425203), (**8**) 23 April 1990; **R. Glendurragh**, Ederny (H222652), (**8**) 21 September 1990; **R. Sillees**, Drumkeen New Bridge (H230413), (**8**) 23 April 1990.

TYRONE: Ballynahatty Water (R. Owenreagh), Ballynahatty (H437673), (**1**) 8 April and (**2**) 2 September 1990; **Quiggery Water**, Edergoole Bridge (H449678), (**11**) 2 September 1990.

21. *Silo nigricornis* (Pictet, 1834) **First records for Northern Ireland**

Silo nigricornis is widely distributed but no specimens were taken in the south-east (Fig. 21).

RIVPACS records

ANTRIM: R. Dervock, Iderown Bridge (D021334), (**2**) 21 March, (**8**) 31 July and (**1**) 6 November 1990; **Six Mile Water**, Ballyboley Bridge (J315950), (**5**) 16 May, (**1**) 12 June and (**5**) 18 September 2000.

ARMAGH: R. Callan, Paper Mill Bridge (H857392), (**2**) 5 April 1990.

DERRY (LONDONDERRY): R. Mayoghill, Caheny Bridge (C889191), (**1**) 16 May and (**11**) 21 September 2000.

FERMANAGH: Lisblake Burn, Brockagh (H169373), (**1**) 27 April, (**14**) 14 August and (**2**) 10 November 2000; **Lisnabane Burn**, Lisnabane Bridge (H379447), (**1**) 10 August 2000; **R. Ballinamallard**, Magheracross (H281537), (**1**) 19 September 1990; **R. Boho**, Boho (H134445), (**4**) 23 October 1990.

TYRONE: R. Cleen, Kiltermon Bridge (H475482), (**2**) 26 April 2000; **R. Coolaghty**, Coolaghty (H257673), (**1**) 12 August 2000; **R. Owenkillew**, Broughderg Bridge (H684853), (**1**) 2 October 2000.

22. *Silo pallipes* (Fabricius, 1781)

Previously recorded from Counties Antrim and Armagh (King and Halbert, 1910; Fahy, 1972), *Silo pallipes* is widely distributed (Fig. 22).

RIVPACS records

ANTRIM: Coopers Water, Boomers Bridge (J216757), (**1**) 22 May 2000; **Doagh R. tributary**, Dixons Corner (J258937). (**3**) 18 September 2000; **Douglas Burn**, Lynnas Bridge (J227998), (**1**) 14 June and (**1**) 25 October 2000; **R. Bush**, Ballyhoe (D077291), (**2**) 15 May 1991; **R. Clady** (Clady Water), Dunadry (J194846), (**64**) 22 February 1991; **R. Glenshesk**, B15 Road Bridge (D126406), (**1**) 19 November 1990; **Ross Burn**, Rossburn (J159973), (**1**) 14 June and (**7**) 25 October 2000; **Six Mile Water**, Ballyboley Bridge (J315950), (**22**) 16 May, (**16**) 12 June and (**5**) 18 September 2000.

DERRY (LONDONDERRY): Miltown Burn, A29 Road Bridge (H848997), (**1**) 8 May

2000; **R. Agivey**, Glen Ullin (C792124), (**1**) 16 May 2000; **R. Douglas**, Boheradaile (H774967), (**7**) 16 October 2000; **R. Inver**, Inver Bridge (C535010), (**2**) 28 September 2000.

DOWN: R. Annalong, Annalong Bridge (J374198), (**1**) 23 May 1991.

FERMANAGH: Cooneen Water, Legatillida (H455396), (**1**) 30 April and (**8**) 8 November 2000; **Foxhill Burn**, Drumcreen (H279529), (**2**) 24 May and (**10**) 10 November 2000; **Lisblake Burn**, Brockagh (H169373), (**9**) 27 April 2000; **Lisnabane Burn**, Lisnabane Bridge (H379447), (**7**) 24 May, (**6**) 10 August and (**14**) 9 November 2000; **R. Ballinamallard**, Magheracross (H281537), (**9**) 22 April and (**17**) 19 September 1990; **R. Black**, Drumkeenagh (H018435), (**1**) 27 April, (**4**) 18 July and (**1**) 20 September 1990; **R. Garvary**, Larkhill (H009630), (**17**) 20 April and (**6**) 25 October 1990; **R. Lack**, Croneen (H256665), (**4**) 22 March and (**1**) 1 November 2000.

TYRONE: Black Water, Carrickaness Bridge (H297743), (**1**) 10 April 2000; **Dunnyboe Burn**, Dunnyboe Bridge (H459993), (**1**) 19 July and (**7**) 24 October 2000; **Fury R.**, Belalastera Bridge (H552517), (**1**) 26 February, (**4**) 11 June and (**12**) 27 October 1991; **Glashagh Burn**, Cashel Wood (H615803), (**1**) 12 April and (**1**) 2 October 2000; **Granagh Burn**, Carrickmore (H604721), (**1**) 5 April and (**6**) 13 November 2000; **Lissan Water**, Drumgrass Bridge (H806816), (**2**) 14 March and (**56**) 18 November 1991, (**2**) 10 June 1993; **Oughtmame Burn**, Oughtmame (H625937), (**3**) 17 April and (**3**) 5 October 2000; **R. Cleen**, Kiltermon Bridge (H475482), (**27**) 26 April and (**3**) 2 November 2000; **R. Cloghfin**, Ballykeel Bridge (H572671), (**1**) 27 July and (**2**) 13 November 2000; **R. Coolaghty**, Coolaghty (H257673), (**3**) 22 March and (**4**) 2 November 2000; **R. Owenkillew**, Broughderg Bridge (H684853), (**2**) 12 April 2000; **R. Owenreagh**, B84 Road Bridge (H330658), (**1**) 25 November 2000; **Tullynadall Burn**, Tullynadall (H447906), (**2**) 19 April 2000.

LEPIDOSTOMATIDAE

23. *Lepidostoma basale* (Kolenati, 1848) **First record for Northern Ireland**

Lepidostoma basale was only found at one site (Fig. 23). Elswhere in Ireland, the species has been reported from Co. Kerry (O'Connor, 1987). There is also another published but unlocalised Irish record (Donohue *et al.*, 2009).

RIVPACS record

FERMANAGH: R. Roogagh (Glen R.), Garrison (G941518), (**59**) 20 September 1990.

24. *Lepidostoma hirtum* (Fabricius, 1775)

Previously recorded from Co. Antrim (King and Halbert, 1910), *Lepidostoma hirtum* is widely distributed (Fig. 24).

RIVPACS records

ANTRIM: Cashel Burn, Downstream Bridge (D173069), (**1**) 15 May and (**16**) 25 October 2000; **Douglas Burn**, Lynnas Bridge (J227998), (**6**) 16 May 2000; **Dunnstown Burn**, Dunnstown (D048095), (**1**) 19 June and (**9**) 25 October 2000; **Kellswater**, Rock Bridge (J160983), (**8**) 30 March and (**2**) 29 October 1990; **Legnagooly Burn**, Legnagooly Bridge (D132128), (**1**) 25 October 2000; **R. Blackwater**, Caledon Bridge (H759446), (**5**) 27 March 1991; **R. Braid**, Harryville Bridge (D105030), (**2**) 29 October 1990; **R. Bush**, Ballyhoe (D077291), (**8**) 24 October 1991; **R. Bush**, Seneirl Bridge (C942360), (**25**) 21 March and (**9**) 6 November 1990; **R. Clady**, Glenone Bridge (C963038), (**4**) 12 October 1990; **R. Clogh**, Glarryford Bridge (D062131), (**3**) 28 March and (**3**) 5 November 1990; **R. Dervock**, Iderown Bridge (D021334), (**1**) 21 March and (**1**) 6 November 1990; **R. Main**, Dunmore Bridge (J087896), (**3**) 28 March and (**24**) 5 November 1990.

ARMAGH: Forkhill R., Forkhill Lower Bridge (J015157), (**464**) 25 March, (**4**) 24 July and (**792**) 23 October 1991.

DERRY (LONDONDERRY): Cam Burn, Ballynacally Beg (C843212), (**22**) 16 May and (**1**) 29 June 2000; **R. Aghadowey**, White Bridge (C879228), (**3**) 30 October 1990; **R. Agivey**, Glen Ullin (C792124), (**2**) 16 May and (**1**) 21 September 2000; **R. Ballinderry**, Ballinderry Bridge (H927798), (**17**) 25 May and (**16**) 2 November 1990; **R. Ballinderry**, Corkhill Bridge (H734793), (**1**) 18 November 1991.

DOWN: Begny Hill Feeder, Woodford Bridge (J289502), (**14**) 22 May and (**12**) 7 June 2000; **Cassy Water**, Cassy Water Bridge (J238149), (**2**) May 1990 and (**1**) 21 February 1991; **Newry R.**, Carnmeen (J075303), (**31**) 13 March, (**3**) 14 June and (**9**) 13 September 1990; **R. Annacloy**, Annacloy Bridge (J448484), (**200**) 16 March, (**8**) 10 July and (**432**) 2 October 1990; **R. Annalong**, Annalong Bridge (J374198), (**1**) 6 March, (**2**) 23 May and (**8**) 24 October 1991; **R. Kinnahalla**, upstream New Bridge (J239289), (**5**) 22 May, (**8**) 21 June and (**1**) 4 September 2000; **R. Lagan**, Bulls Brook (J252516), (**1**) 6 June 1990; **R. Mullagh**, Mullagh Bridge (J332160), (**414**) 22 May, (**40**) 17 July and (**104**) 1 November 2000; **R. Shimna**, Tollymore Forest (J353323), (**2**) 20 November 1991; **Spences R.**, Glassdrumman Bridge (J377228), (**8**) 22 May 2000; **Upper Bann**, Hilltown (J218291), (**32**) 12 March, (**9**) 8 June and (**51**) 25 September 1990.

FERMANAGH: R. Black, Drumkeenagh (H018435), (**1**) 27 April 1990; **R. Garvary**, Larkhill (H009630), (**1**) 25 October 1990; **R. Roogagh** (Glen R.), Garrison (G941518), (**32**) 27 April, (**40**) 18 July and (**8**) 20 September 1990; **R. Sillees**, Derrygonnelly (H118521), (**102**) 21 April and (**1**) 19 July 1990; **R. Sillees**, Drumkeen New Bridge (H230413), (**1**) 16 September 1990.

TYRONE: Ballynahatty Water (R. Owenreagh), Ballynahatty (H437673), (**1**) 20 June

1990; **Black Water**, Carrickaness Bridge (H297743), (**1**) 10 April and (**4**) 15 November 2000; **Dunnyboe Burn**, Dunnyboe Bridge (H459993), (**1**) 24 October 2000; **Eskragh Water** (Quiggery Water), Seskinore Mill Bridge (H472635), (**30**) 28 February and (**16**) 3 October 1991; **Fairywater**, Mullanatoomog (H392766), (**35**) 23 May and (**16**) 12 November 1990; **Glashagh Burn**, Cashel Wood (H615803), (**1**) 12 April 2000; **Granagh Burn**, Carrickmore (H604721), (**1**) 5 April 2000; **R. Camowen**, Donnelly's Bridge (H464730), (**280**) 8 April, (**31**) 21 June and (**3**) 3 September 1990; **R. Cloghfin**, Black Hill (H512706), (**3**) 14 April and (**2**) 24 June 1991; **R. Derg**, Aghyaran Bridge (H191806), (**20**) 9 April, (**1**) 6 August and (**17**) 6 September 1990; **R. Derg**, Crewe Bridge (H315845), (**19**) 22 May and (**6**) 12 November 1990; **R. Owenkillew**, Broughderg Bridge (H684853), (**2**) 2 October 2000; **R. Owenreagh**, Cashel Bridge (H582822), (**1**) 8 October 1991; **R. Strule**, Moyle Bridge (H411861), (**16**) 9 April and (**3**) 18 June 1990; **Quiggery Water**, Edergoole Bridge (H449678), (**57**) 8 April, (**49**) 20 June and (**80**) 2 September 1990; **Tullynadall Burn**, Tullynadall (H447906), (**6**) 19 April and (**2**) 5 October 2000.

LIMNEPHILIDAE

25. *Anabolia nervosa* (Curtis, 1834)

Previously recorded from Counties Armagh and Fermanagh (King and Halbert, 1910; O'Connor, Bond and O'Connor, 2013), *Anabolia nervosa* is widely distributed (Fig. 25).

RIVPACS records

ANTRIM: Kellswater, Rock Bridge (J160983), (**21**) 30 March 1990; **R. Braid**, Harryville Bridge (D105030), (**16**) 30 March 1990; **R. Bush**, Seneirl Bridge (C942360), (**26**) 21 March, (**1**) 31 July and (**8**) 6 November 1990; **R. Clogh**, Glarryford Bridge (D062131), (**13**) 28 March 1990; **R. Crumlin**, Airport Bridge (J192767), (**1**) 25 May 1990; **R. Main**, Dunmore Bridge (J087896), (**3**) 28 March and (**1**) 2 August 1990; **R. Main** (Killagan Water), Dundermot Bridge (D057130), (**107**) 28 March and (**56**) 18 October 1990.

ARMAGH: R. Cusher, Knock Bridge (J039508), (**16**) 2 April, (**24**) 12 June and (**3**) 12 September 1990.

DERRY (LONDONDERRY): R. Aghadowey, White Bridge (C879228), (**2**) 29 May 1990.

DOWN: R. Lagan, Bulls Brook (J252516), (**2**) 7 March 1990; **Upper Bann**, Ballydown (J138450), (**16**) 20 March 1990.

FERMANAGH: R. Arney, Brockagh (H175375), (**1**) 25 April 1990; **R. Colebrooke**, Tullyreagh Cross (H378441), (**8**) 19 April and (**4**) 17 July 1990; **R. Finn**, Wattle Bridge (H425203), (**56**) 23 April and (**13**) 22 July 1990; **R. Glendurragh**, Ederny (H222652), (**2**) 24 July 1990; **R. Sillees**, Drumkeen New Bridge (H230413), (**8**) 23 April 1990.

TYRONE: Ballynahatty Water (R. Owenreagh), Ballynahatty (H437673), (**123**) 8 April, (**35**) 20 June and (**2**) 2 September 1990; **Eskragh Water** (Quiggery Water), Seskinore Mill Bridge (H472635), (**4**) 28 February 1991; **Glashagh Burn**, Cashel Wood (H615803), (**3**) 12 April 2000; **R. Ballinderry**, Doorless (H835764), (**26**) 9 May 1990; **R. Blackwater**, Derrymeen Bridge (H625530), (**1**) 11 June 1991; **R. Camowen**, Donnelly's Bridge (H464730), (**167**) 8 April and (**17**) 21 June 1990; **R. Cloghfin**, Black Hill (H512706), (**1**) 24 June 1991; **R. Derg**, Crewe Bridge (H315845), (**12**) 22 May 1990; **R. Owenkillew**, Broughderg Bridge (H684853), (**2**) 12 April 2000; **R. Owenreagh**, Cashel Bridge (H582822), (**4**) 7 April and (**8**) 16 June 1991; **R. Strule**, Moyle Bridge (H411861), (**2**) 9 April and (**1**) 18 June 1990; **Quiggery Water**, Edergoole Bridge (H449678), (**1**) 8 April 1990.

26. *Drusus annulatus* (Stephens, 1837) **First records for Northern Ireland**

Drusus annulatus is widely distributed (Fig. 26).

RIVPACS records

ANTRIM: Coopers Water, Boomers Bridge (J216757), (**1**) 7 June 2000; **Crew Burn**, Carrols Bridge (J134707), (**1**) 22 May and (**1**) 7 June 2000; **Doagh R.**, Dunamoy (J260935), (**2**) 25 February and (**1**) 6 September 1991; **Glenariff R.**, Callisnagh Bridge (D224214), (**2**) 19 November 1990; **Doagh R. tributary**, Dixons Corner (J258937), (**1**) 16 May and (**1**) 13 June 2000; **Legnagooly Burn**, Legnagooly Bridge (D132128), (**1**) 16 May and (**5**) 25 October 2000; **R. Clady** (Clady Water), Dunadry (J194846), (**21**) 22 February 1991; **R. Dervock**, Iderown Bridge (D021334), (**25**) 21 March 1990; **R. Larne**, Owens Bridge (D378008), (**1**) 6 June and (**126**) 14 November 1991; **Ross Burn**, Rossburn (J159973), (**1**) 22 May, (**5**) 14 June and (**4**) 25 October 2000; **Six Mile Water**, Ballyboley Bridge (J315950), (**42**) 16 May and (**5**) 12 June 2000.

DERRY (LONDONDERRY): Cam Burn, Ballynacally Beg (C843212), (**1**) 29 June 2000; **R. Ballinderry**, Corkhill Bridge (H734793), (**1**) 18 November 1991; **R. Douglas**, Boheradaile (H774967), (**1**) 8 May and (**12**) 16 October 2000; **R. Inver**, Inver Bridge (C535010), (**2**) 26 April and (**8**) 28 September 2000; **R. Owenalena**, B84 Road Bridge (C743060), (**4**) 26 September 2000; **R. Owenrigh**, Carnanbane (C669067), (**3**) 5 September 1990.

DOWN: Begny Hill Feeder, Woodford Bridge (J289502), (**2**) 22 May and (**2**) 7 June 2000; **R. Kinnahalla**, upstream New Bridge (J239289), (**2**) 22 May 2000.

FERMANAGH: Lisblake Burn, Brockagh (H169373), (**6**) 27 April 2000; **R. Boho**, Boho (H134445), (**69**) 21 April, (**34**) 16 July and (**15**) 23 October 1990.

TYRONE: Black Water, Carrickaness Bridge (H297743), (**1**) 15 November 2000; **Dreenan Burn**, Dreenan Bridge (H212843), (**5**) 15 November 2000; **Dunnyboe Burn**, Dunnyboe Bridge

(H459993), (**1**) 19 April and (**1**) 24 October 2000; **Granagh Burn**, Carrickmore (H604721), (**1**) 26 July 2000; **Lissan Water**, Drumgrass Bridge (H806816), (**8**) 18 November 1991; **R. Cleen**, Kiltermon Bridge (H475482), (**3**) 26 April 2000; **R. Owenreagh**, B84 Road Bridge (H330658), (**4**) 25 November 2000; **Tullynadall Burn**, Tullynadall (H447906), (**4**) 5 October 2000.

27. *Ecclisopteryx dalecarlica* Kolenati, 1848 **First records for Northern Ireland**

Ecclisopteryx dalecarlica is a local species (Fig. 27) as in the rest of Ireland (O'Connor, unpublished data).

RIVPACS records

DERRY (LONDONDERRY): R. Agivey, Glen Ullin (C792124), (**3**) 29 June and (**45**) 21 September 2000; **R. Mayoghill**, Caheny Bridge (C889191), (**1**) 21 September 2000.

TYRONE: Dunnyboe Burn, Dunnyboe Bridge (H459993), (**22**) 19 July and (**14**) 24 October 2000; **Granagh Burn**, Carrickmore (H604721), (**1**) 26 July and (**4**) 13 November 2000; **R. Glenelly**, Clougherny Bridge (H563913), (**1**) 21 May and (**1**) 13 November 1990; **R. Owenkillew**, Broughderg Bridge (H684853), (**4**) 2 October 2000; **R. Owenkillew**, Killymore Bridge (H438873), (**3**) 7 September 1990; **R. Owenkillew**, Monanameal Bridge (H613847), (**1**) 7 April 1991.

28. *Limnephilus flavicornis* (Fabricius, 1787)

Previously recorded from Counties Armagh and Fermanagh (King and Halbert, 1910; O'Connor, Bond and O'Connor, 2013), *Limnephilus flavicornis* was only collected at two sites (Fig. 28).

RIVPACS records

ARMAGH: R. Cusher, Knock Bridge (J039508), (**16**) 2 April 1990.

FERMANAGH: R. Finn, Wattle Bridge (H425203), (**1**) 23 April 1990.

29. *Limnephilus lunatus* Curtis, 1834

Previously recorded from Counties Antrim, Armagh, Derry and Fermanagh (King and Halbert, 1910; Murphy and Carter, 1984; O'Connor, Bond and O'Connor, 2013), *Limnephilus lunatus* is widely distributed (Fig. 29).

RIVPACS records

ANTRIM: Doagh R., Dunamoy (J260935), (**1**) 25 February 1991; **Dunnstown Burn**, Dunnstown (D048095), (**2**) 19 May 2000; **R. Braid**, Harryville Bridge (D105030), (**9**) 30 March 1990; **R. Bush**, Seneirl Bridge (C942360), (**8**) 21 March 1990; **R. Main** (Killagan Water), Dundermot Bridge (D057130), (**2**) 28 March 1990.

DERRY (LONDONDERRY): R. Aghadowey, White Bridge (C879228), (**2**) 29 May 1990;

R. Moyola, New Bridge (H956905), (**2**) 5 June 1990.

DOWN: Newry R., Carnmeen (J075303), (**1**) 14 June 1990.

FERMANAGH: R. Colebrooke, Tullyreagh Cross (H378441), (**1**) 17 July 1990; **R. Sillees**, Drumkeen New Bridge (H230413), (**64**) 23 April and (**8**) 16 July 1990.

TYRONE: Ballynahatty Water (R. Owenreagh), Ballynahatty (H437673), (**18**) 8 April 1990; **Fairywater**, Mullanatoomog (H392766), (**1**) 23 May 1990; **R. Ballinderry**, Doorless (H835764), (**1**) 9 May 1990; **R. Camowen**, Donnelly's Bridge (H464730), (**1**) 8 April and (**9**) 21 June 1990.

30. *Limnephilus marmoratus* Curtis, 1834

Previously recorded from Counties Antrim, Armagh and Fermanagh (King and Halbert, 1910; O'Connor, Bond and O'Connor, 2013), *Limnephilus marmoratus* was only taken at three sites (Fig. 30).

RIVPACS records

ARMAGH: R. Cusher, Knock Bridge (J039508), (**16**) 2 April 1990.

DOWN: Newry R., Carnmeen (J075303), (**1**) 14 June 1990.

FERMANAGH: R. Finn, Wattle Bridge (H425203), (**4**) 22 October 1990.

31. *Limnephilus rhombicus* (Linnaeus, 1758)

Previously recorded from Co. Armagh (King and Halbert, 1910), *Limnephilus rhombicus* was only taken at two sites (Fig. 31).

RIVPACS records

DERRY (LONDONDERRY): R. Moyola, New Bridge (H956905), (**4**) 27 September 1990.

FERMANAGH: R. Finn, Wattle Bridge (H425203), (**16**) 22 October 1990.

SERICOSTOMATIDAE

32. *Sericostoma personatum* (Spence, 1826)

Previously recorded from Counties Antrim, Armagh, Derry and Fermanagh (King and Halbert, 1910; Fahy, 1972; Murphy and Carter, 1984), *Sericostoma personatum* is widely distributed (Fig. 32).

RIVPACS records

ANTRIM: Cashel Burn, Downstream Bridge (D173069), (**8**) 15 May, (**1**) 26 July and (**14**) 25 October 2000; **Crew Burn**, Carrols Bridge (J134707), (**8**) 22 May and (**2**) 7 June 2000; **Doagh R.**, Dunamoy (J260935), (**1**) 25 February and (**1**) 5 June 1991; **Douglas Burn**, Lynnas Bridge (J227998), (**1**) 16 May 2000; **Dunnstown Burn**, Dunnstown (D048095), (**1**) 19 June and (**2**) 25 October 2000; **Glenariff R.**, Callisnagh Bridge (D224214), (**1**) 30 May 1990; **Glynn R.**,

Glynn (J408999), (**1**) 14 November 1991; **Kellswater**, Rock Bridge (J160983), (**8**) 30 March 1990; **Legnagooly Burn**, Legnagooly Bridge (D132128), (**5**) 16 May, (**1**) 19 June and (**2**) 25 October 2000; **R. Braid**, Harryville Bridge (D105030), (**3**) 30 March 1990; **R. Bush**, Seneirl Bridge (C942360), (**1**) 21 March 1990; **R. Clady** (Clady Water), Dunadry (J194846), (**1**) 22 February and (**2**) 21 October 1991; **R. Clady**, Glenone Bridge (C963038), (**1**) 5 June and (**1**) 12 October 1990; **R. Dervock**, Iderown Bridge (D021334), (**1**) 21 March, (**1**) 31 July and (**1**) 6 November 1990; **Ross Burn**, Rossburn (J159973), (**2**) 22 May, (**1**) 14 June and (**4**) 25 October 2000; **Six Mile Water**, Ballyboley Bridge (J315950), (**8**) 16 May, (**20**) 12 June and (**20**) 18 September 2000.

ARMAGH: Forkhill R., Forkhill Lower Bridge (J015157), (**8**) 25 March and (**3**) 23 October 1991; **Kilnasaggart (R.)**, Kilnasaggart Bridge (J060150), (**1**) 17 May and (**1**) 23 October 2000; **R. Callan**, Paper Mill Bridge (H857392), (**8**) 5 April 1990.

DERRY (LONDONDERRY): Cam Burn, Ballynacally Beg (C843212), (**2**) 16 May 2000; **Miltown Burn**, A29 Road Bridge (H848997), (**2**) 15 August 2000; **R. Aghadowey**, White Bridge (C879228), (**3**) 30 October 1990; **R. Agivey**, Glen Ullin (C792124), (**2**) 16 May, (**2**) 29 June and (**13**) 21 September 2000; **R. Ballinderry**, Corkhill Bridge (H734793), (**1**) 14 March, (**1**) 29 July and (**7**) 18 November 1991; **R. Douglas**, Boheradaile (H774967), (**30**) 15 August and (**2**) 16 October 2000; **R. Inver**, Inver Bridge (C535010), (**1**) 26 April 2000; **R. Mayoghill**, Caheny Bridge (C889191), (**5**) 16 May, (**2**) 29 June and (**1**) 21 September 2000; **R. Owenalena**, B84 Road Bridge (C743060), (**2**) 16 May and (**8**) 26 September 2000.

DOWN: Begny Hill Feeder, Woodford Bridge (J289502), (**9**) 22 May and (**4**) 7 June 2000; **Cassy Water**, Cassy Water Bridge (J238149), (**4**) 5 September 1991; **R. Annacloy**, Annacloy Bridge (J448484), (**2**) 16 March and (**8**) 2 October 1990; **R. Annalong**, Annalong Bridge (J374198), (**1**) 6 March 1991; **R. Kinnahalla**, upstream New Bridge (J239289), (**1**) 22 May and (**4**) 21 June 2000; **R. Lagan**, Bulls Brook (J252516), (**1**) 6 June 1990; **R. Mullagh**, Mullagh Bridge (J332160), (**1**) 22 May 2000; **R. Shankys**, Tornamrock Park (J225255), (**2**) 3 April, (**3**) 21 June and (**1**) 4 September 2000; **R. Shimna**, Tollymore Forest (J353323), (**2**) 20 November 1991; **Upper Bann**, Hilltown (J218291), (**9**) 25 September 1990; **Spences R.**, Glassdrumman Bridge (J377228), (**3**) 22 May, (**3**) 5 June and (**1**) 1 November 2000.

FERMANAGH: Lisblake Burn, Brockagh (H169373), (**23**) 27 April 2000; **R. Ballinamallard**, Magheracross (H281537), (**8**) 19 September 1990; **R. Black**, Drumkeenagh (H018435), (**2**) 18 July and (**2**) 20 September 1990; **R. Garvary**, Larkhill (H009630), (**1**) 25 October 1990; **R. Roogagh** (Glen R.), Garrison (G941518), (**8**) 27 April, (**16**) 18 July and (**24**) 20 September 1990.

TYRONE: Ballynahatty Water (R. Owenreagh), Ballynahatty (H437673), (**1**) 2 September

1990; **Black Water**, Carrickaness Bridge (H297743), (**2**) 31 July and (**3**) 15 November 2000; **Dreenan Burn**, Dreenan Bridge (H212843), (**3**) 9 August and (**1**) 15 November 2000; **Dunnyboe Burn**, Dunnyboe Bridge (H459993), (**1**) 19 April and (**1**) 19 July 2000; **Fury R.**, Belalastera Bridge (H552517), (**1**) 26 February 1991; **Glashagh Burn**, Cashel Wood (H615803), (**3**) 12 April, (**1**) 31 July and (**2**) 2 October 2000; **Gortin Water**, Gortin Bridge (H782792), (**4**) 27 March, (**3**) 3 July and (**3**) 26 September 2000; **Granagh Burn**, Carrickmore (H604721), (**1**) 5 April 2000; **Lissan Water**, Drumgrass Bridge (H806816), (**1**) 14 March and (**16**) 18 November 1991, (**7**) 10 June 1993; **Oughtmame Burn**, Oughtmame (H625937), (**1**) 17 April 2000; **R. Camowen**, Donnelly's Bridge (H464730), (**1**) 8 April 1990; **R. Cleen**, Kiltermon Bridge (H475482), (**2**) 26 April and (**1**) 2 November 2000; **R. Cloghfin**, Ballykeel Bridge (H572671), (**1**) 27 July and (**3**) 13 November 2000; **R. Derg**, Aghyaran Bridge (H191806), (**2**) 6 September 1990; **R. Derg**, Crewe Bridge (H315845), (**1**) 22 May and (**1**) 12 November 1990; **R. Owenreagh**, B84 Road Bridge (H330658), (**1**) 24 May and (**4**) 25 November 2000; **Tullynadall Burn**, Tullynadall (H447906), (**5**) 19 April, (**2**) 10 August and (**2**) 5 October 2000.

ODONTOCERIDAE

33. *Odontocerum albicorne* (Scopoli, 1763) **First records for Northern Ireland**

Surprisingly, no specimens were found in the south-east (Fig. 33) as *Odontocerum albicorne* is a widespread Irish species.

RIVPACS records

ANTRIM: Legnagooly Burn, Legnagooly Bridge (D132128), (**1**) 16 May, (**3**) 19 June and (**4**) 25 October 2000; **Six Mile Water**, Ballyboley Bridge (J315950), (**14**) 16 May, (**32**) 12 June and (**6**) 18 September 2000.

DERRY (LONDONDERRY): R. Agivey, Glen Ullin (C792124), (**2**) 16 May, (**1**) 29 June and (**1**) 21 September 2000.

FERMANAGH: R. Garvary, Larkhill (H009630), (**2**) 25 October 1990.

TYRONE: Lissan Water, Drumgrass Bridge (H806816), (**3**) 18 November 1991.

BERAEIDAE

34. *Beraea maurus* (Curtis, 1834)

Previously recorded from Co. Antrim (King and Halbert, 1910), *Beraea maurus* was only found at four sites (Fig. 34).

RIVPACS records

DERRY (LONDONDERRY): R. Douglas, Boheradaile (H774967), (**1**) 15 August 2000.

FERMANAGH: Foxhill Burn, Drumcreen (H279529), (**1**) 15 August 2000.

TYRONE: Fury R., Belalastera Bridge (H552517), (**2**) 26 February 1991; **Glenariff R.**, Callisnagh Bridge (D224214), (**1**) 19 November 1990.

35. *Beraea pullata* (Curtis, 1834)

Previously recorded from Co. Armagh (King and Halbert, 1910), only one specimen of *Beraea pullata* was found (Fig. 35).

RIVPACS records

FERMANAGH: R. Roogagh (Glen R.), Garrison (G941518), (**1**) 20 September 1990.

36. *Beraeodes minutus* (Linnaeus, 1761) First records for Northern Ireland

The discovery of the larvae of *Beraeodes minutus* at six sites in Northern Ireland is very interesting as it greatly increases the known distribution of this poorly known species (Fig. 36). Elsewhere in Ireland, *B. minutus* has only been reported from Counties Cavan, Kerry, Meath, Tipperary and Waterford. All the records are larval ones except for a single female recently discovered in a sample from Co. Waterford (O'Connor, 2014).

RIVPACS records

ANTRIM: R. Clogh, Glarryford Bridge (D062131), (**1**) 5 November 1990.

FERMANAGH: R. Colebrooke, Tullyreagh Cross (H378441), (**6**) 19 April and (**9**) 17 September 1990; **R. Glendurragh**, Ederny (H222652), (**3**) 21 September 1990.

TYRONE: Black Water, Carrickaness Bridge (H297743), (**2**) 15 November 2000; **R. Camowen**, Donnelly's Bridge (H464730), (**1**) 8 April 1990; **R. Owenreagh**, B84 Road Bridge (H330658), (**3**) 25 November 2000.

LEPTOCERIDAE

37. *Athripsodes albifrons* (Linnaeus, 1758) First records for Northern Ireland

Surprisingly, *Athripsodes albifrons* was only taken at five sites and was not found in the north-east (Fig. 37).

RIVPACS records

DOWN: Newry R., Carnmeen (J075303), (**17**) 14 June 1990.

FERMANAGH: R. Arney, Brockagh (H175375), (**8**) 21 July 1990; **R. Black**, Drumkeenagh (H018435), (**1**) 27 April 1990.

TYRONE: R. Camowen, Donnelly's Bridge (H464730), (**6**) 8 April and (**9**) 21 June 1990; **R. Strule**, Moyle Bridge (H411861), (**35**) 18 June 1990.

38. *Athripsodes aterrimus* (Stephens, 1836)

Previously recorded from Co. Armagh (King and Halbert, 1910), *Athripsodes aterrimus* is

widely distributed except in the north (Fig. 38).

RIVPACS records

ANTRIM: R. Main, Dunmore Bridge (J087896), (**4**) 28 March 1990; **Six Mile Water**, below Ballyclare (J285903), (**1**) 26 September 1990.

DOWN: Newry R., Carnmeen (J075303), (**30**) 13 March, (**17**) 14 June and (**69**) 13 September 1990; **R. Lagan**, Bulls Brook (J252516), (**60**) 7 March, (**48**) 6 June and (**24**) 8 October 1990; **Upper Bann**, Ballydown (J138450), (**4**) 24 September 1992.

FERMANAGH: R. Finn, Wattle Bridge (H425203), (**16**) 23 April and (**14**) 22 October 1990.

TYRONE: Fairywater, Mullanatoomog (H392766), (**1**) 23 May 1990; **R. Camowen**, Donnelly's Bridge (H464730), (**5**) 8 April 1990.

39. *Athripsodes bilineatus* (Linnaeus, 1758) **First records for Northern Ireland**

The numerous larval records of *Athripsodes bilineatus* from the south-west and south-east is very surprising for previously the species has only been known from a small number of specimens in Ireland (Fig. 39). King and Halbert (1910) recorded the species from Lucan (Co. Dublin) and the River Shannon (Co. Westmeath). JPOC has confirmed the identity of 2♂♂ from the Westmeath site which are preserved in the National Museum of Ireland (O'Connor, unpublished data) but has not found any other Irish adults during his research despite examining the heads and genitalia of numerous specimens belonging to the *A. albifrons*/*bilineatus* group. Perhaps *A. bilineatus* is easier to collect in the larval stage or is locally abundant in Ireland. In Britain, it is widely distributed but not common (Barnard and Ross, 2012).

RIVPACS records

DOWN: Upper Bann, Ballydown (J138450), (**8**) 20 March 1990; **Upper Bann**, Hilltown (J218291), (**8**) 25 September 1990.

FERMANAGH: Foxhill Burn, Drumcreen (H279529), (**1**) 24 May and (**2**) 10 November 2000; **Lisnabane Burn**, Lisnabane Bridge (H379447), (**2**) 24 May and (**1**) 9 November 2000; **R. Ballinamallard**, Magheracross (H281537), (**2**) 22 April 1990; **R. Bannagh**, Bannagh Bridge (H162654), (**7**) 20 April 1990; **R. Glendurragh**, Ederny (H222652), (**1**) 21 September 1990; **R. Termon**, Killynoogan (H111659), (**4**) 24 October 1990.

TYRONE: Ballynahatty Water (R. Owenreagh), Ballynahatty (H437673), (**91**) 8 April 1990; **Fury R.**, Belalastera Bridge (H552517), (**16**) 27 October 1991; **R. Cleen**, Kiltermon Bridge (H475482), (**4**) 26 April and (**6**) 2 November 2000.

40. *Athripsodes cinereus* (Curtis, 1834)

Previously recorded from Counties Antrim, Armagh and Derry (King and Halbert, 1910;

Murphy and Carter, 1984), *Athripsodes cinereus* is widely distributed (Fig. 40).

RIVPACS records

ANTRIM: Kellswater, Rock Bridge (J160983), (**8**) 30 March 1990; **R. Braid**, Harryville Bridge (D105030), (**35**) 29 October 1990; **R. Bush**, Seneirl Bridge (C942360), (**525**) 21 March, (**19**) 31 July and (**150**) 6 November 1990; **R. Clogh**, Glarryford Bridge (D062131), (**12**) 28 March and (**17**) 5 November 1990, (**2**) 1 August 1991; **R. Main**, Dunmore Bridge (J087896), (**4**) 28 March 1990.

ARMAGH: Forkhill R., Forkhill Lower Bridge (J015157), (**2**) 24 July 1991; **R. Cusher**, Knock Bridge (J039508), (**64**) 2 April, (**1**) 12 June and (**32**) 12 September 1990.

DERRY (LONDONDERRY): R. Aghadowey, White Bridge (C879228), (**2**) 30 October 1990; **R. Ballinderry**, Ballinderry Bridge (H927798), (**631**) 25 May, (**5**) 13 August and (**103**) 2 November 1990.

DOWN: Newry R., Carnmeen (J075303), (**30**) 13 March and (**69**) 13 September 1990; **R. Lagan**, Bulls Brook (J252516), (**4**) 7 March and (**16**) 6 June 1990; **Upper Bann**, Ballydown (J138450), (**28**) 20 March and (**4**) 12 June 1990, (**4**) 24 September 1992.

FERMANAGH: R. Arney, Brockagh (H175375), (**52**) 25 April and (**1**) 21 July 1990; **R. Ballinamallard**, Magheracross (H281537), (**1**) 22 April and (**1**) 19 September 1990; **R. Sillees**, Derrygonnelly (H118521), (**32**) 21 April and (**4**) 23 October 1990; **R. Sillees**, Drumkeen New Bridge (H230413), (**64**) 16 July and (**1**) 16 September 1990.

TYRONE: Ballynahatty Water (R. Owenreagh), Ballynahatty (H437673), (**91**) 8 April, (**52**) 20 June and (**117**) 2 September 1990; **Eskragh Water** (Quiggery Water), Seskinore Mill Bridge (H472635), (**1**) 30 June 1991; **Fairywater**, Mullanatoomog (H392766), (**48**) 23 May and (**32**) 12 November 1990; **R. Ballinderry**, Doorless (H835764), (**2**) 9 May and (**17**) 2 October 1990; **R. Blackwater**, Caledon Bridge (H759446), (**1**) 26 September 1991; **R. Blackwater**, Derrymeen Bridge (H625530), (**3**) 22 October 1991; **R. Camowen**, Donnelly's Bridge (H464730), (**5**) 8 April, (**8**) 21 June and (**1**) 3 September 1990; **R. Cloghfin**, Black Hill (H512706), (**36**) 14 April, (**1**) 24 June and (**20**) 12 September 1991; **R. Derg**, Aghyaran Bridge (H191806), (**8**) 6 September 1990; **R. Derg**, Crewe Bridge (H315845), (**4**) 12 November 1990; **Quiggery Water**, Edergoole Bridge (H449678), (**29**) 8 April, (**1**) 20 June and (**116**) 2 September 1990.

41. *Ceraclea dissimilis* (Stephens, 1836) **First records for Northern Ireland**

Ceraclea dissimilis was only taken at four sites (Fig. 41).

RIVPACS records

DOWN: Newry R., Carnmeen (J075303), (**17**) 14 June 1990; **R. Annacloy**, Annacloy

Bridge (J448484), (**4**) 16 March 1990; **Upper Bann**, Ballydown (J138450), (**12**) 12 June 1990.

TYRONE: R. Strule, Moyle Bridge (H411861), (**11**) 18 June 1990.

42. *Ceraclea nigronervosa* (Retzius, 1783) **First records for Northern Ireland**

Ceraclea nigronervosa was only found at four sites in the south-west (Fig. 42).

RIVPACS records

FERMANAGH: R. Arney, Brockagh (H175375), (**2**) 18 September 1990; **R. Sillees**, Drumkeen New Bridge (H230413), (**32**) 16 July and (**1**) 16 September 1990.

TYRONE: Fairywater, Mullanatoomog (H392766), (**31**) 7 August 1990; **R. Derg**, Aghyaran Bridge (H191806), (**1**) 6 September 1990.

43. *Mystacides azurea* (Linnaeus, 1761)

Previously recorded from Co. Armagh (King and Halbert, 1910), the species was only found in the east (Fig. 43).

RIVPACS records

ANTRIM: R. Braid, Harryville Bridge (D105030), (**1**) 30 March and (**37**) 29 October 1990; **R. Clogh**, Glarryford Bridge (D062131), (**17**) 5 November 1990; **R. Main**, Dunmore Bridge (J087896), (**1**) 2 August and (**1**) 5 November 1990.

DERRY (LONDONDERRY): R. Moyola, New Bridge (H956905), (**12**) 5 June and (**42**) 27 September 1990.

DOWN: Newry R., Carnmeen (J075303), (**69**) 13 September 1990; **R. Kinnahalla**, upstream New Bridge (J239289), (**1**) 4 September 2000; **Upper Bann**, Ballydown (J138450), (**1**) 24 September 1992.

TYRONE: Eskragh Water (Quiggery Water), Seskinore Mill Bridge (H472635), (**1**) 3 October 1991; **R. Ballinderry**, Doorless (H835764), (**3**) 9 May and (**59**) 2 October 1990; **R. Derg**, Crewe Bridge (H315845), (**1**) 6 August 1990; **R. Strule**, Moyle Bridge (H411861), (**44**) 9 April, (**1**) 18 June and (**1**) 3 September 1990.

Note

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FIGURE 1. RIVPACS distribution of *Rhyacophila dorsalis* in Northern Ireland.

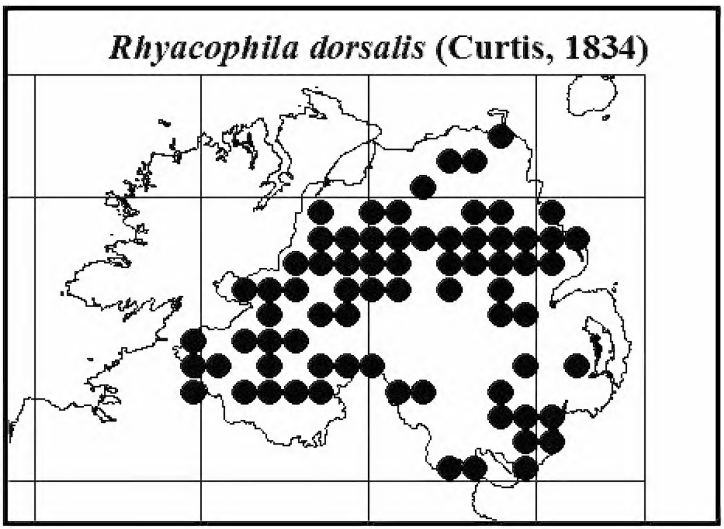


FIGURE 2. RIVPACS distribution of *Rhyacophila munda* in Northern Ireland.

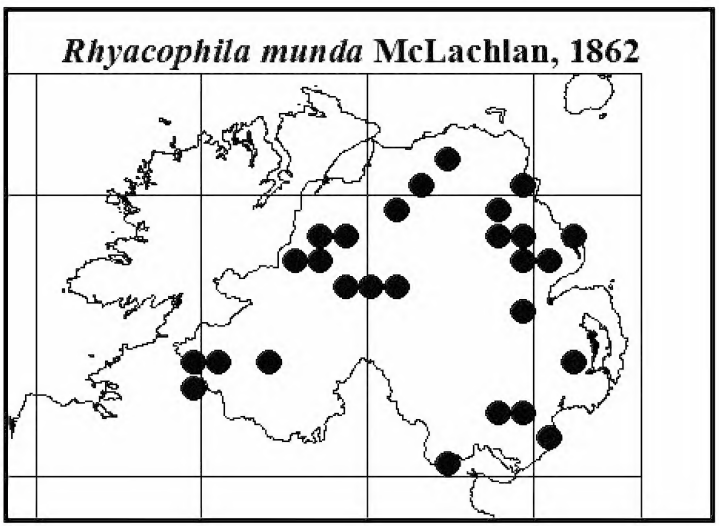


FIGURE 3. RIVPACS distribution of *Agraylea multipunctata* in Northern Ireland.

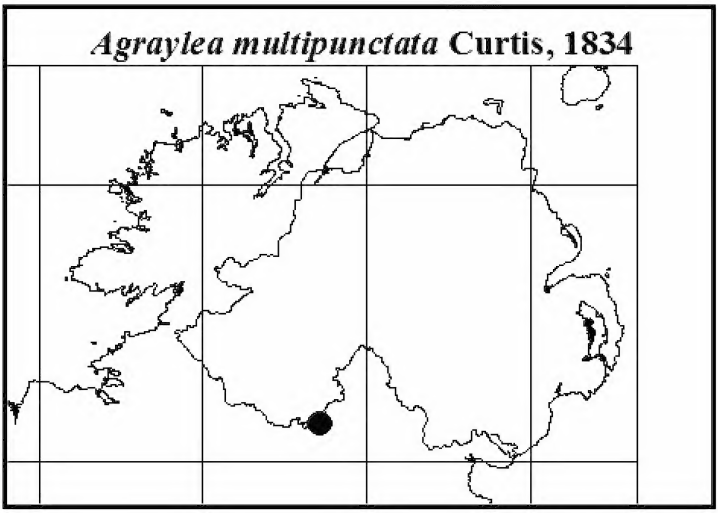


FIGURE 4. RIVPCAS distribution of *Allotrichia pallicornis* in Northern Ireland.

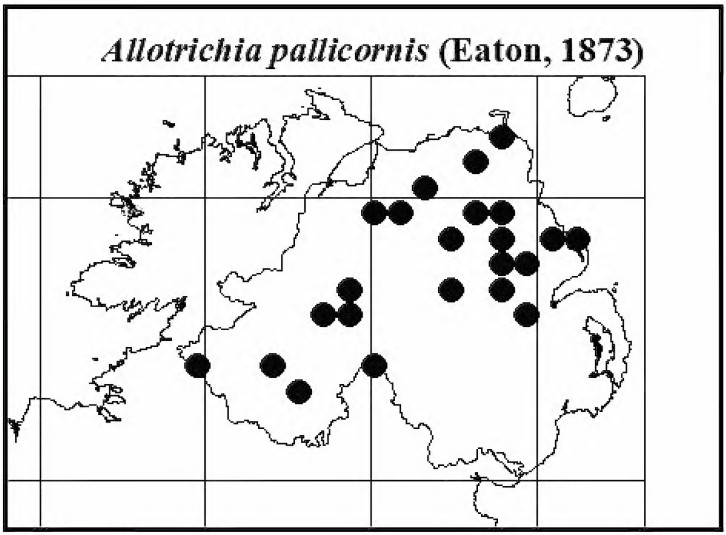


FIGURE 5. RIVPACS distribution of *Philopotamus montanus* in Northern Ireland.

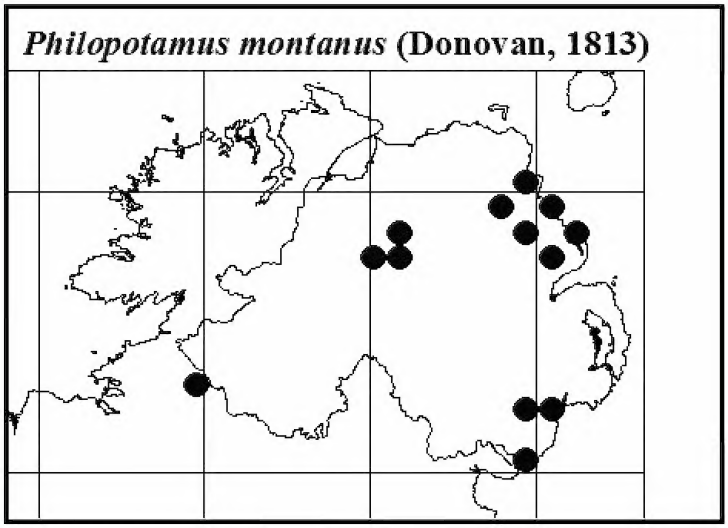


FIGURE 6. RIVPCAS distribution of *Cyrnus trimaculatus* in Northern Ireland.

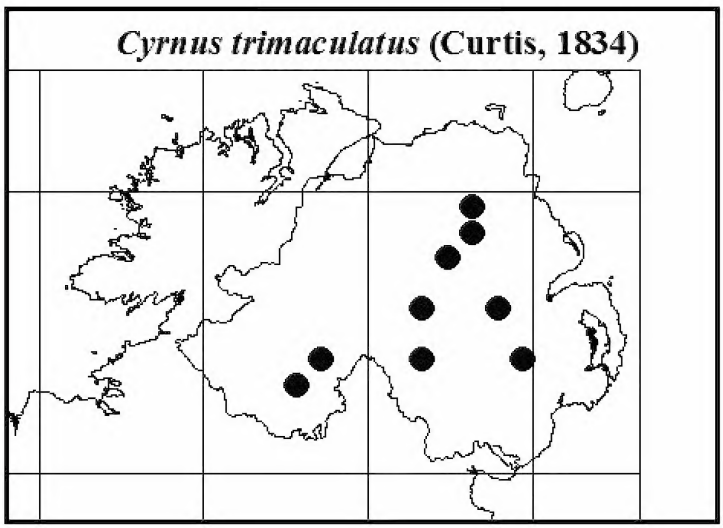


FIGURE 7. RIVPACS distribution of *Neureclipsis bimaculata* in Northern Ireland.

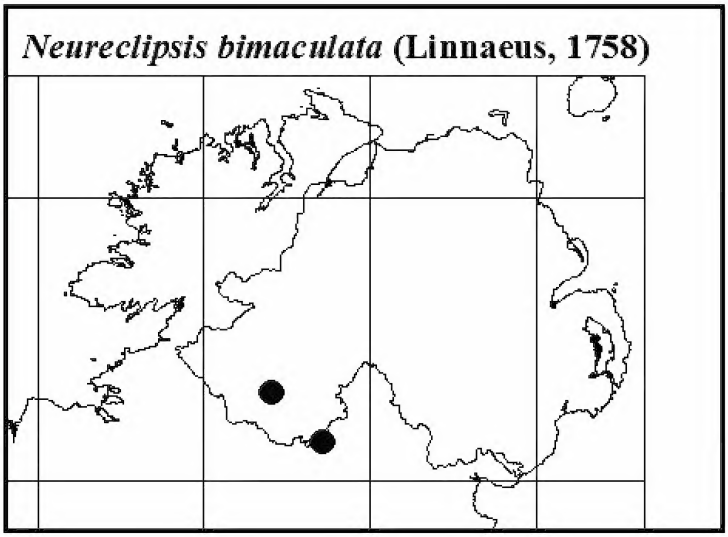


FIGURE 8. RIVPACS distribution of *Plectrocnemia conspersa* in Northern Ireland.

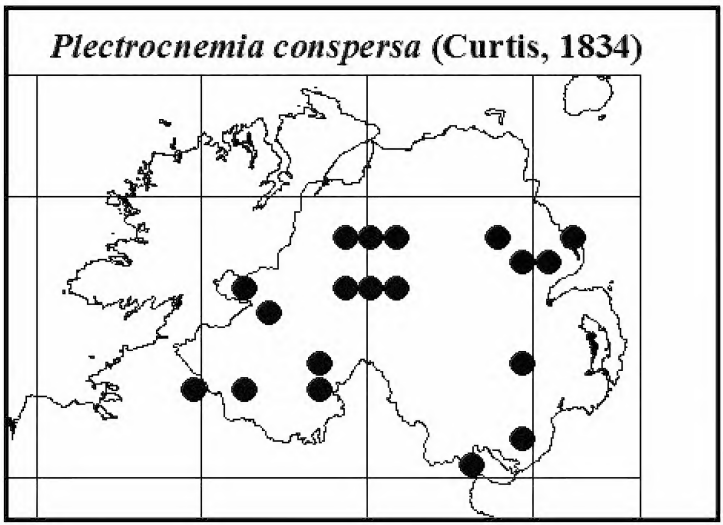


FIGURE 9. RIVPACS distribution of *Plectrocnemia geniculata* in Northern Ireland.

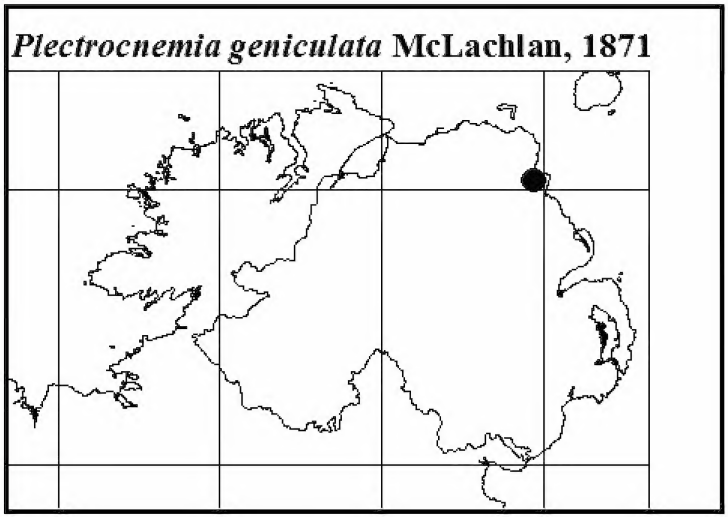


FIGURE 10. RIVPACS distribution of *Polycentropus flavomaculatus* in Northern Ireland.

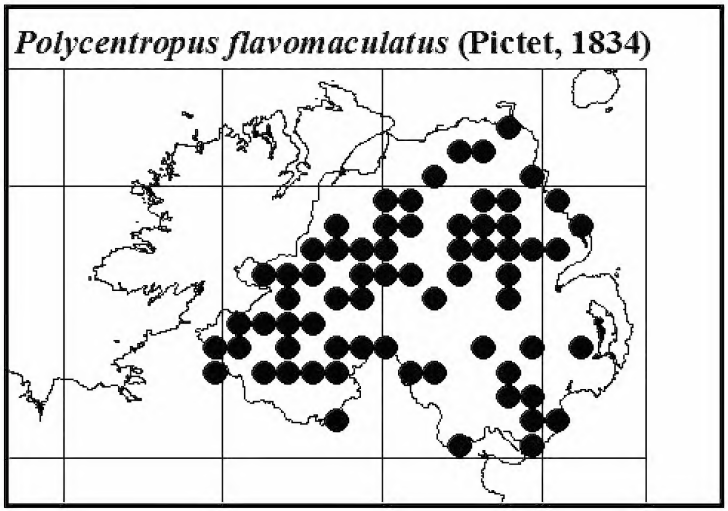


FIGURE 11. RIVPACS distribution of *Polycentropus irroratus* in Northern Ireland.

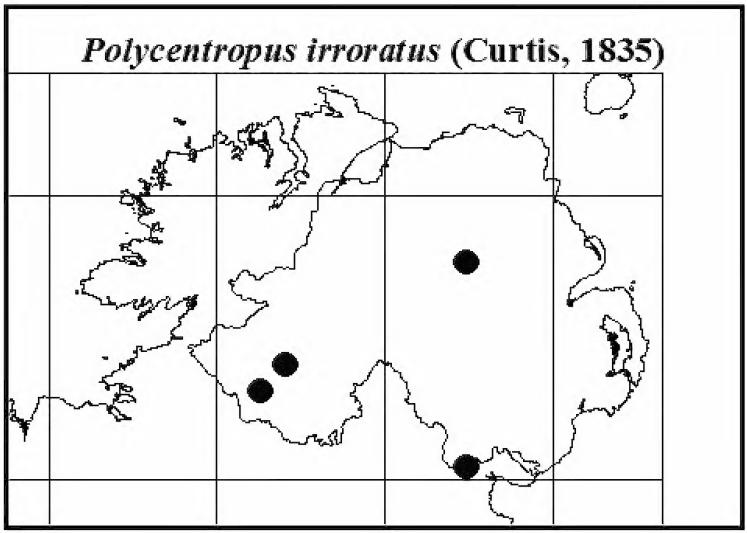


FIGURE 12. RIVPACS distribution of *Polycentropus kingi* in Northern Ireland.

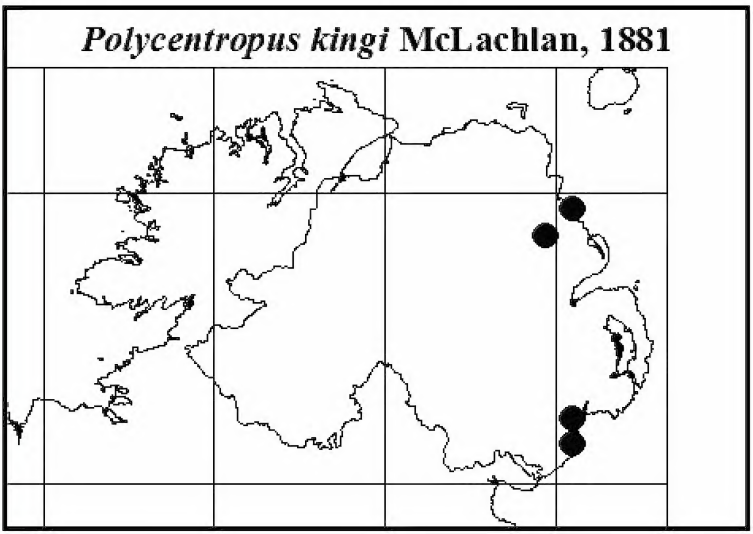


FIGURE 13. RIVPACS distribution of *Psychomyia pusilla* in Northern Ireland.

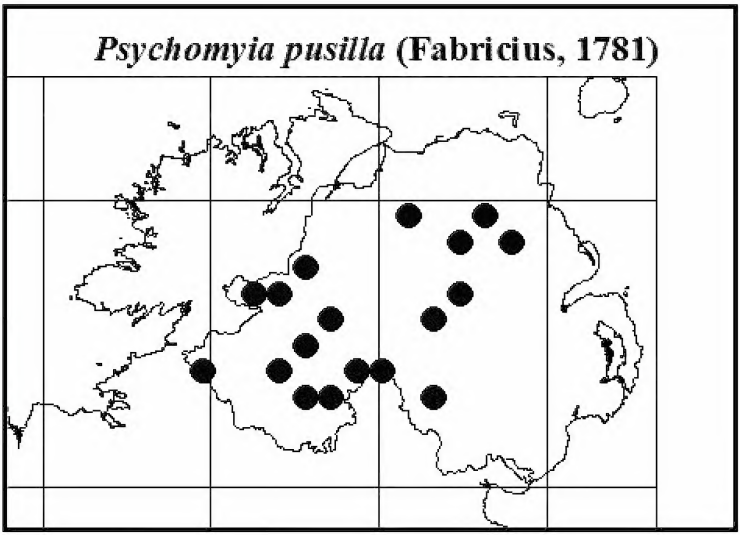


FIGURE 14. RIVPACS distribution of *Tinodes waeneri* in Northern Ireland.

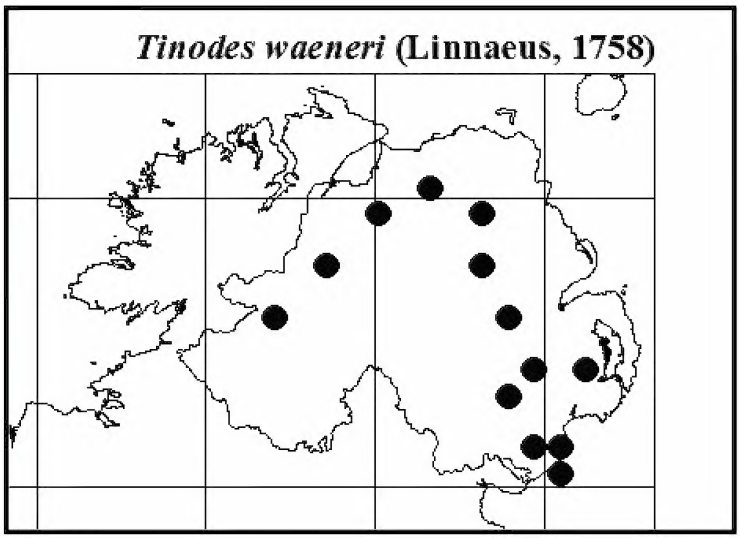


FIGURE 15. RIVPACS distribution of *Cheumatopsyche lepida* in Northern Ireland.

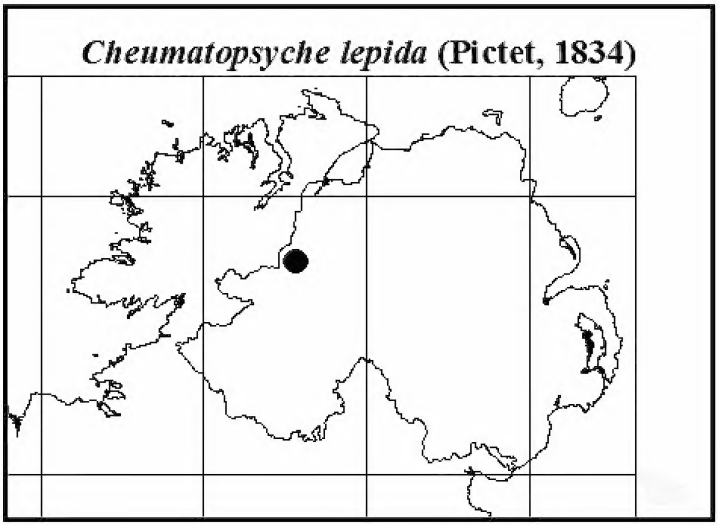


FIGURE 16. RIVPACS distribution of *Hydropsyche angustipennis* in Northern Ireland.

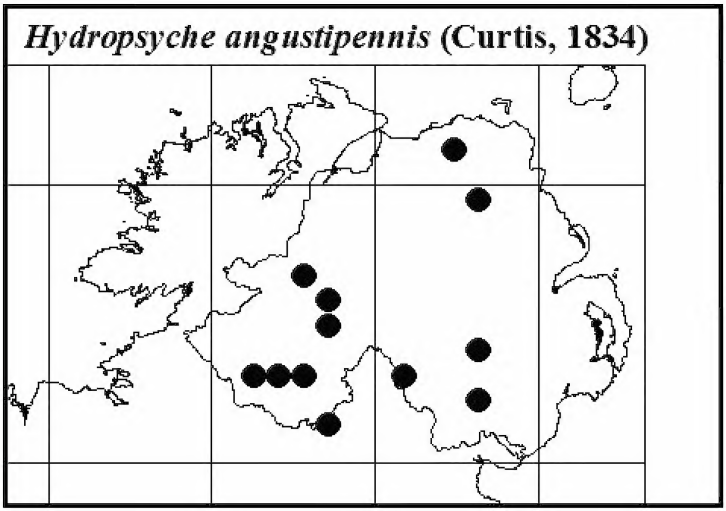


FIGURE 17. RIVPACS distribution of *Hydropsyche instabilis* in Northern Ireland.

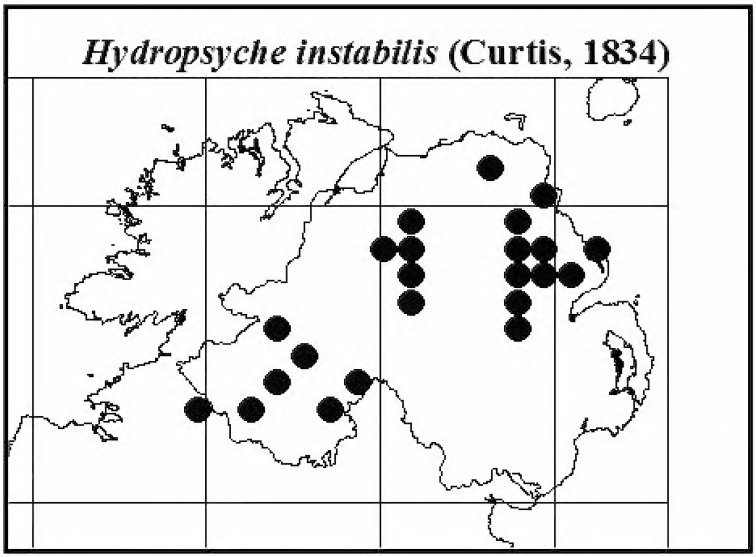


FIGURE 18. RIVPACS distribution of *Hydropsyche pellucidula* in Northern Ireland.

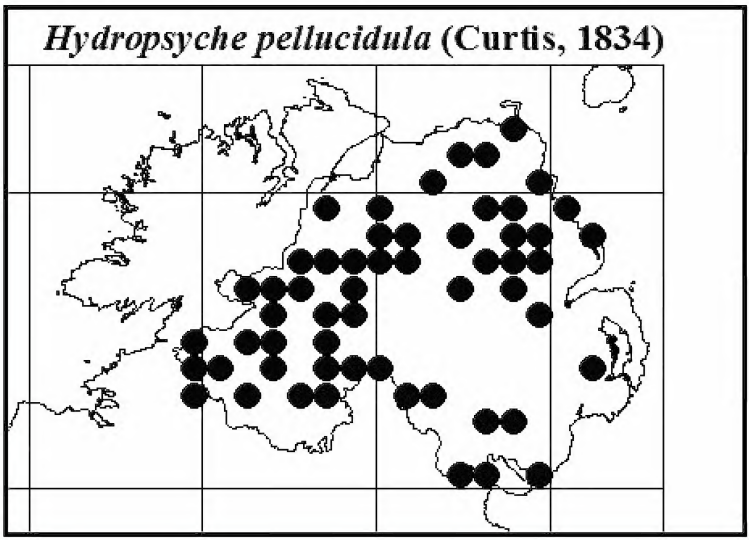


FIGURE 19. RIVPACS distribution of *Hydropsyche siltalai* in Northern Ireland.

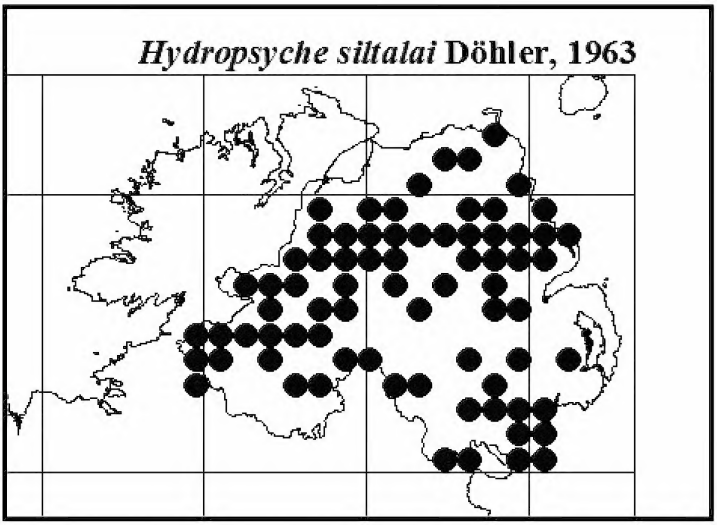


FIGURE 20. RIVPACS distribution of *Goera pilosa* in Northern Ireland.

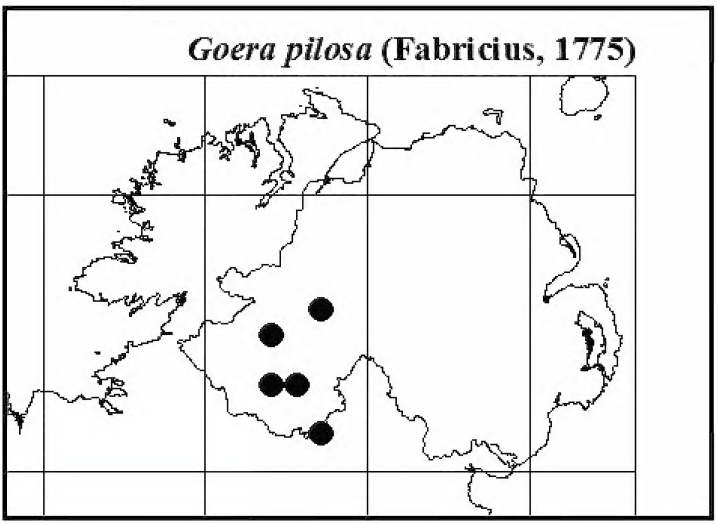


FIGURE 21. RIVPACS distribution of *Silo nigricornis* in Northern Ireland.

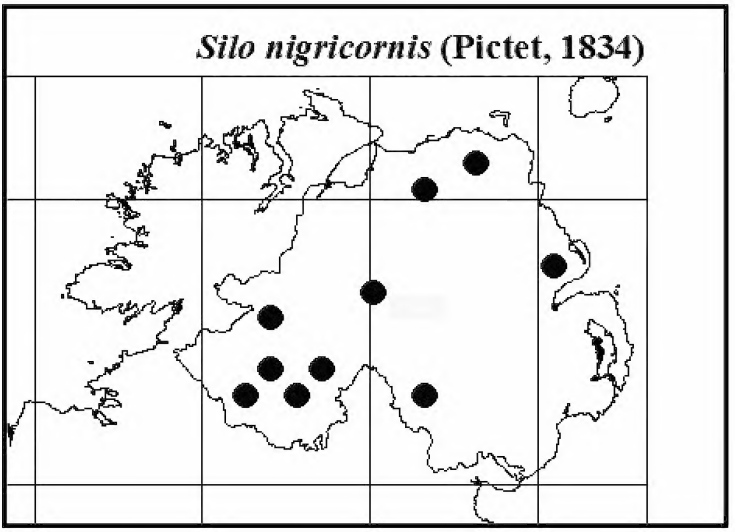


FIGURE 22. RIVPACS distribution of *Silo pallipes* in Northern Ireland.

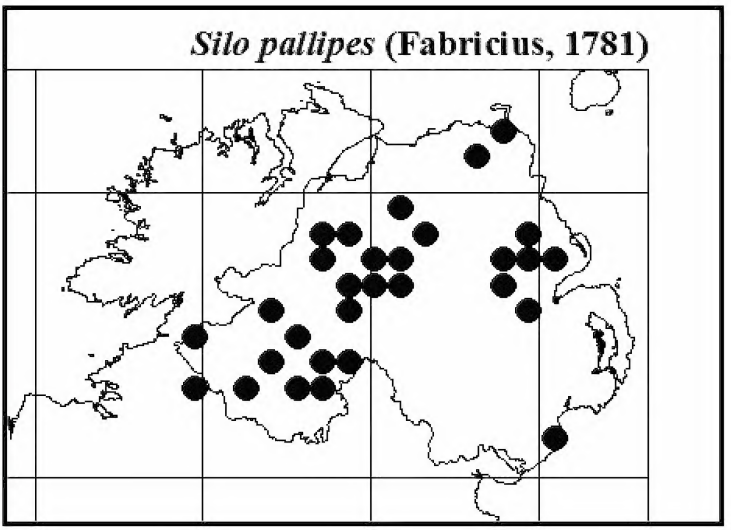


FIGURE 23. RIVPACS distribution of *Lepidosoma basale* in Northern Ireland.

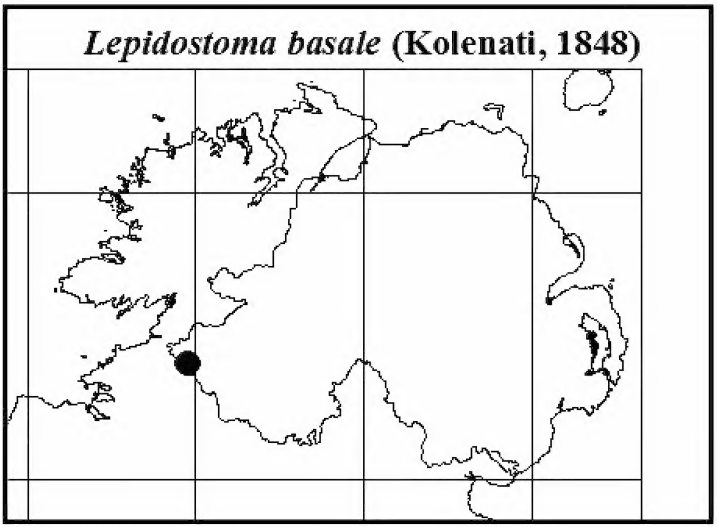


FIGURE 24. RIVPACS distribution of *Lepidostoma hirtum* in Northern Ireland.

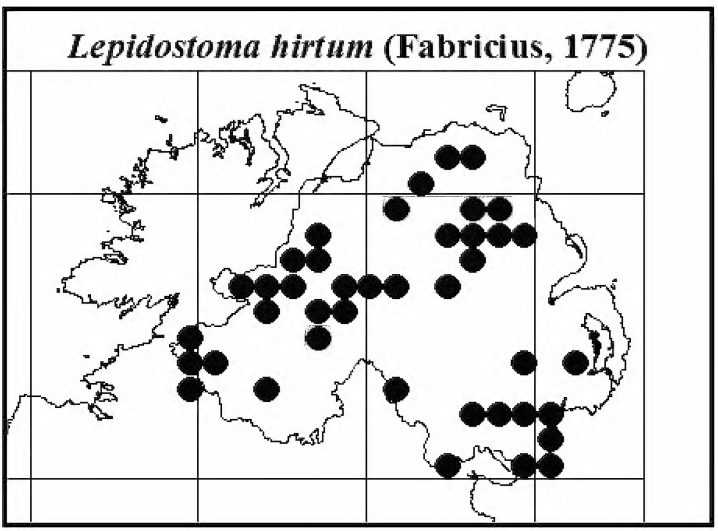


FIGURE 25. RIVPACS distribution of *Anabolia nervosa* in Northern Ireland.

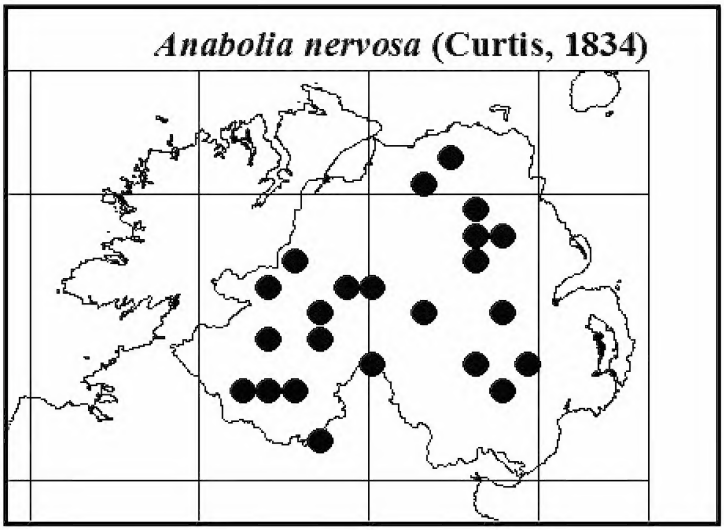


FIGURE 26. RIVPACS distribution of *Drusus annulatus* in Northern Ireland.

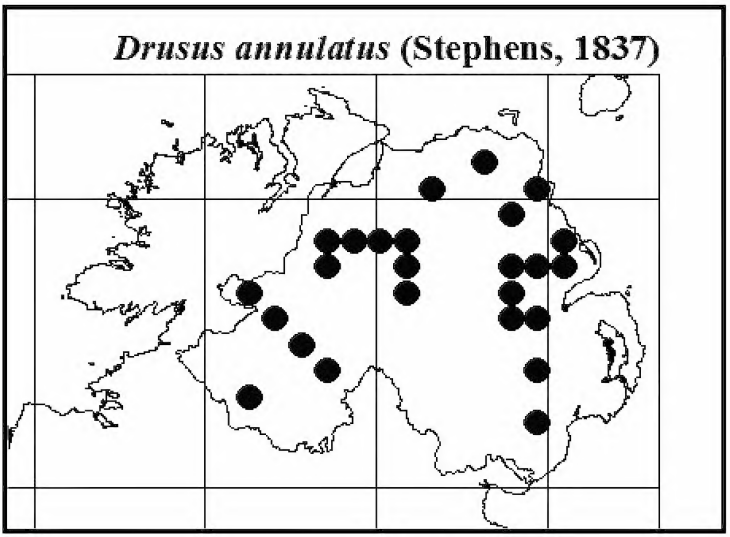


FIGURE 27. RIVPACS distribution of *Ecclisopteryx dalecarlica* in Northern Ireland.

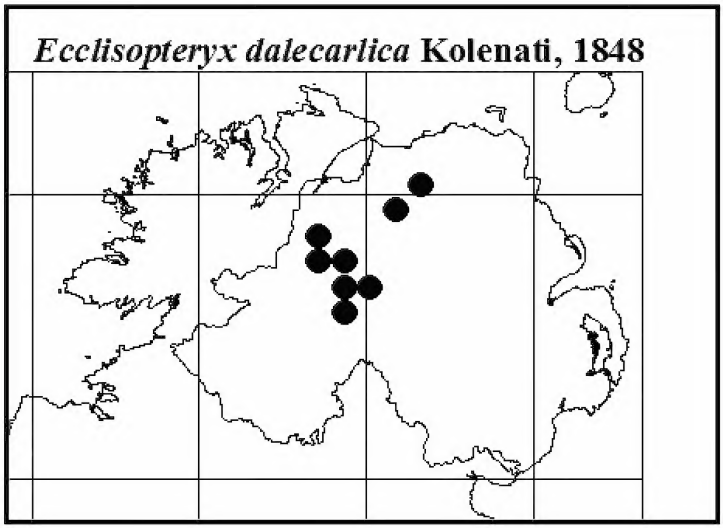


FIGURE 28. RIVPACS distribution of *Limnephilus flavicornis* in Northern Ireland.

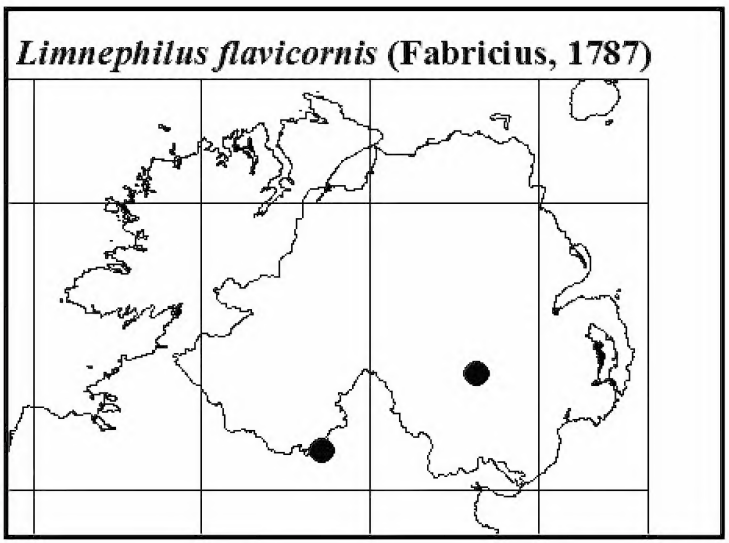


FIGURE 29. RIVPACS distribution of *Limnephilus lunatus* in Northern Ireland.

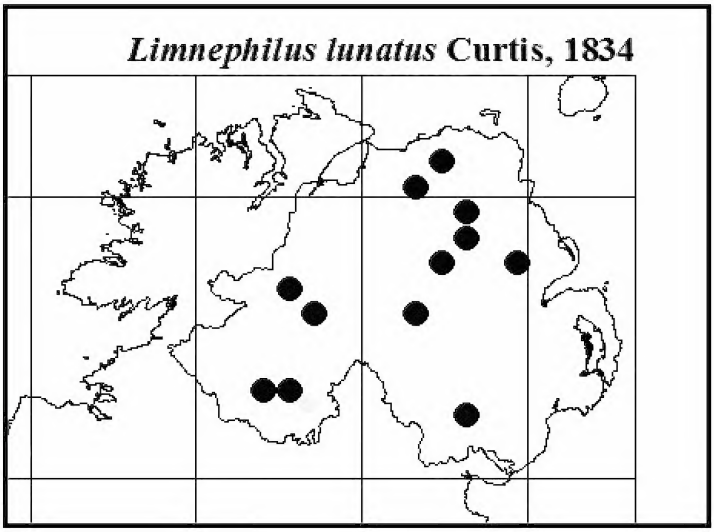


FIGURE 30. RIVPACS distribution of *Limnephilus marmoratus* in Northern Ireland.

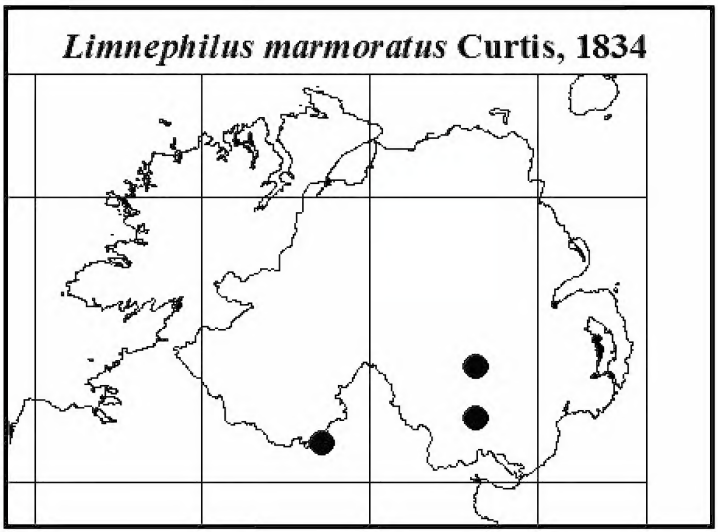


FIGURE 31. RIVPACS distribution of *Limnephilus rhombicus* in Northern Ireland.

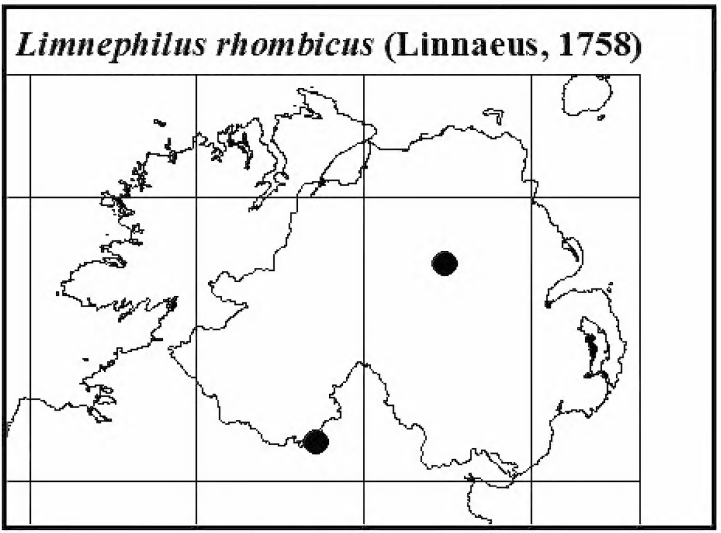


FIGURE 32. RIVPACS distribution of *Sericostoma personatum* in Northern Ireland.

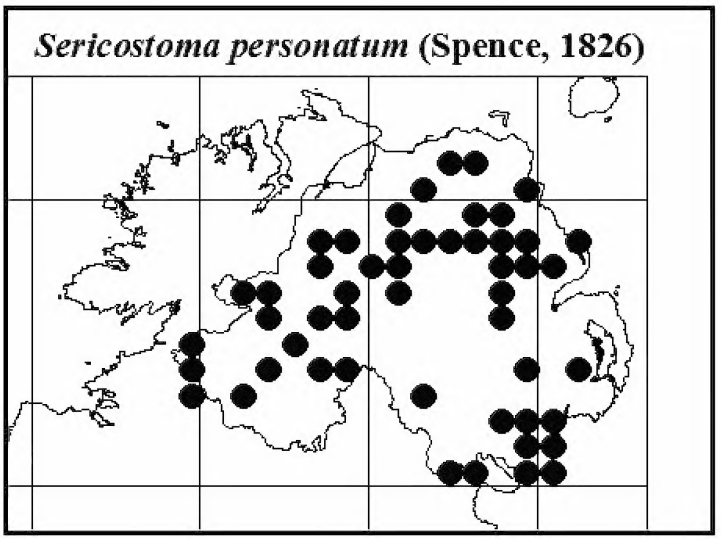


FIGURE 33. RIVPACS distribution of *Odontocerum albicorne* in Northern Ireland.

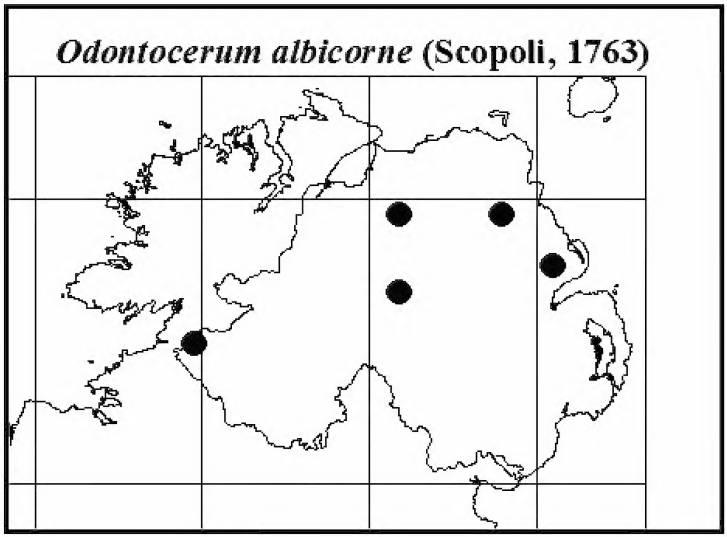


FIGURE 34. RIVPACS distribution of *Beraea maurus* in Northern Ireland.

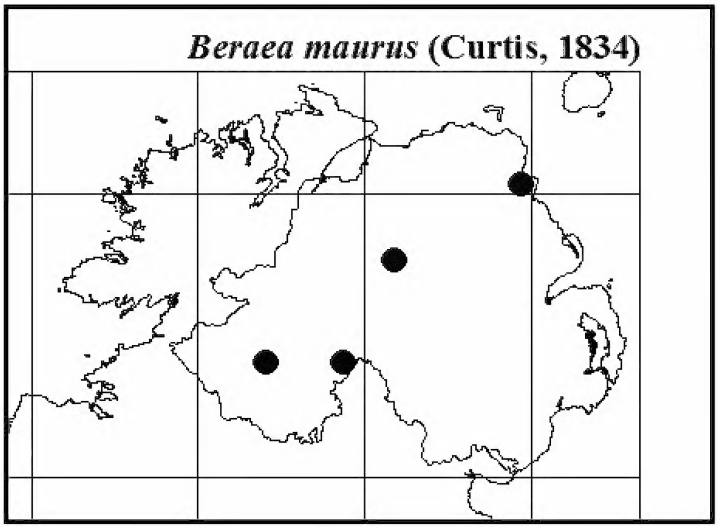


FIGURE 35. RIVPACS distribution of *Beraea pullata* in Northern Ireland.

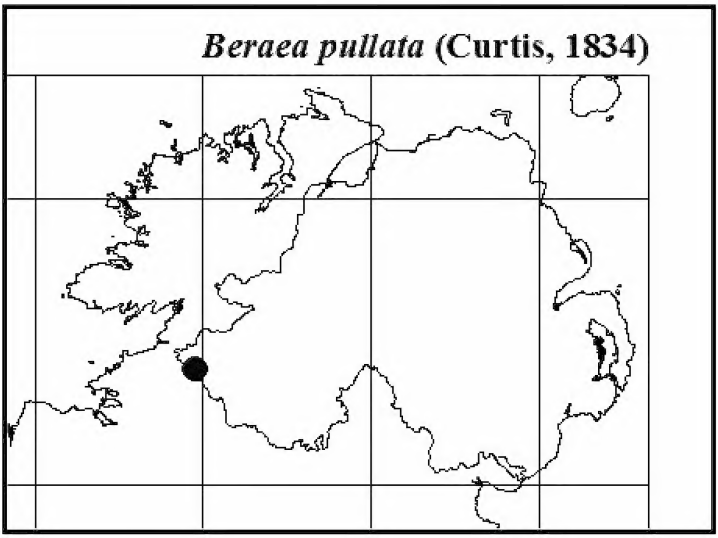


FIGURE 36. RIVPACS distribution of *Beraeodes minutus* in Northern Ireland.

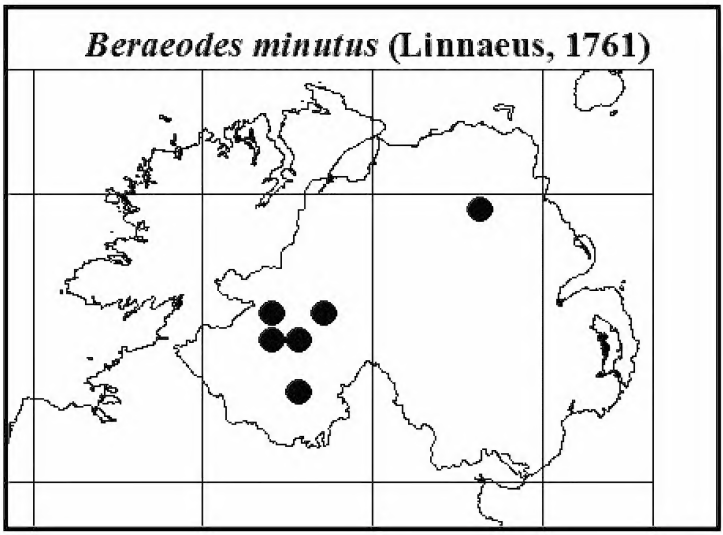


FIGURE 37. RIVPACS distribution of *Athripsodes albifrons* in Northern Ireland.

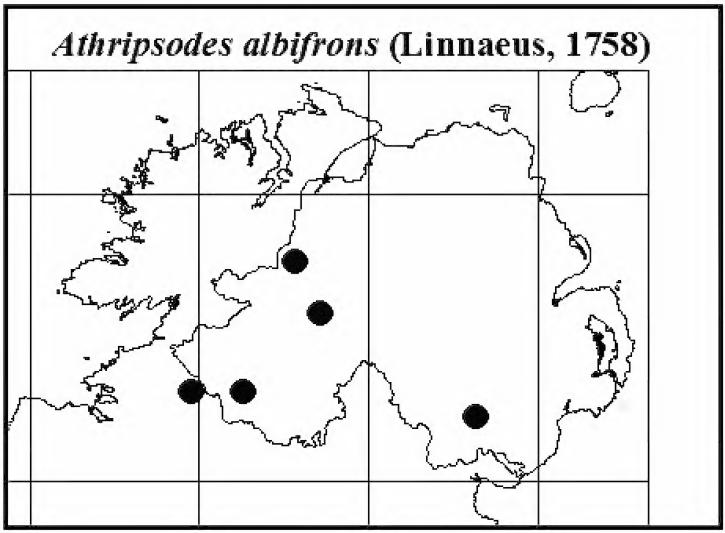
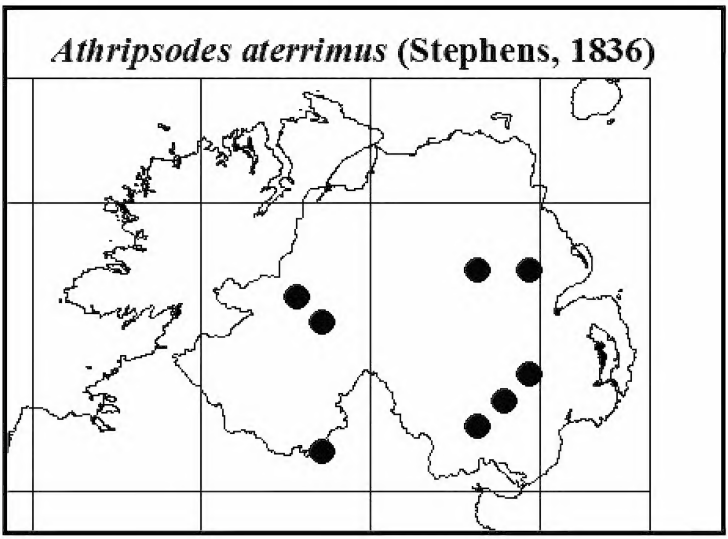


FIGURE 38. RIVPACS distribution of *Athripsodes aterrimus* in Northern Ireland.



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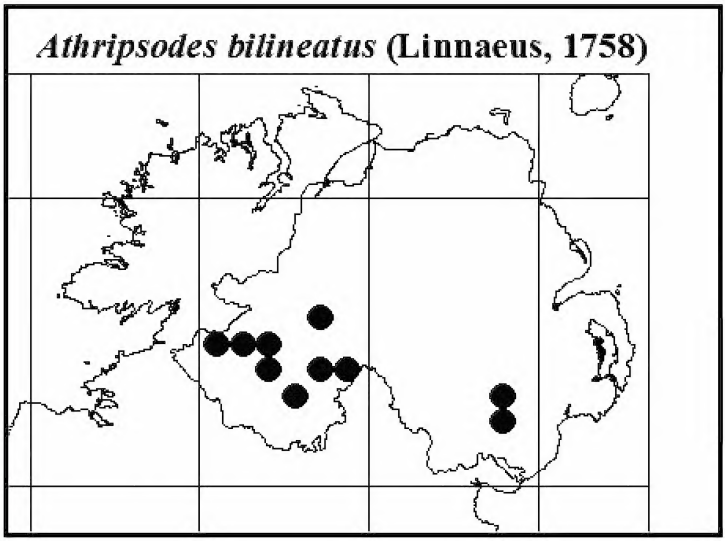

FIGURE 40. RIVPACS distribution of *Athripsodes cinereus* in Northern Ireland.

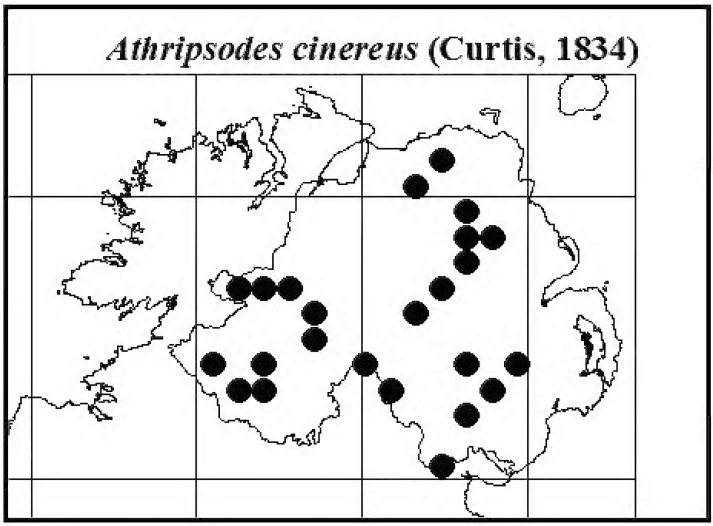

FIGURE 41. RIVPACS distribution of *Ceraclea dissimilis* in Northern Ireland.

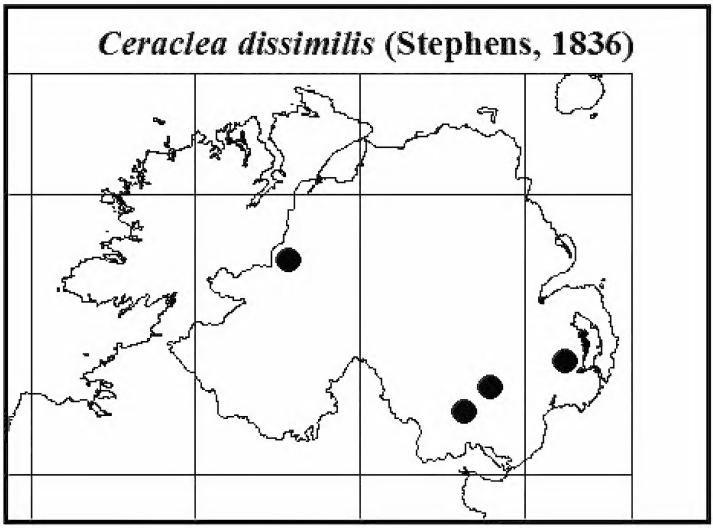

FIGURE 42. RIVPACS distribution of *Ceraclea nigronervosa* in Northern Ireland.

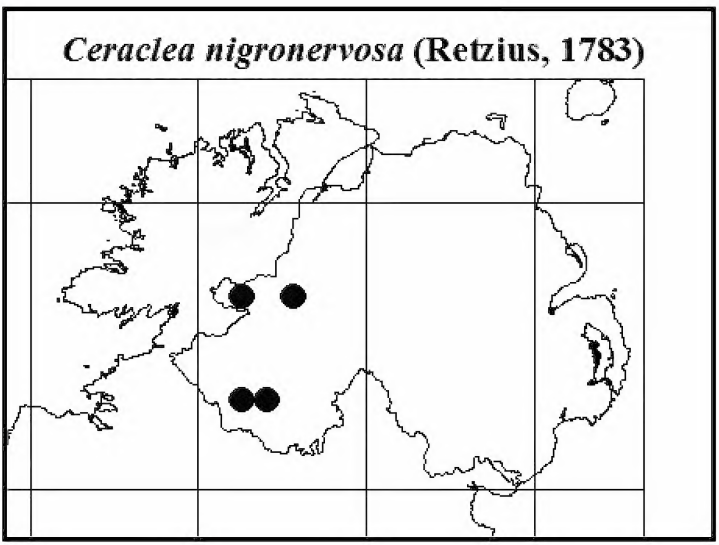

FIGURE 43. RIVPACS distribution of *Mystacides azurea* in Northern Ireland.

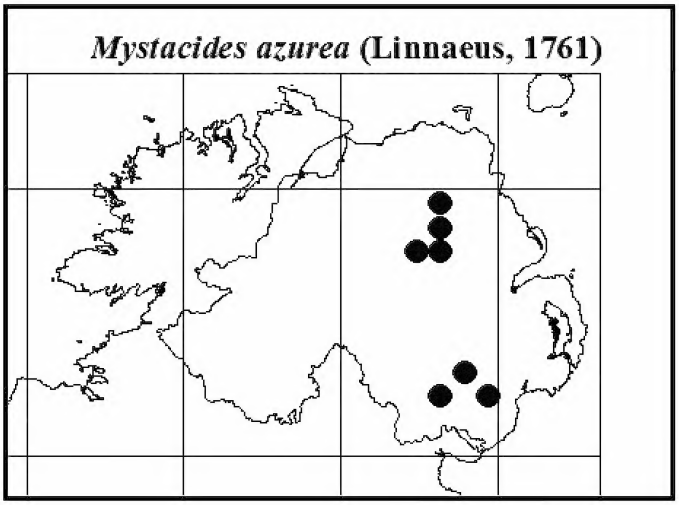

FIGURE 44. Topographical map of Northern Ireland.

FIGURE 45. Map of Ireland showing longitude and latitude.

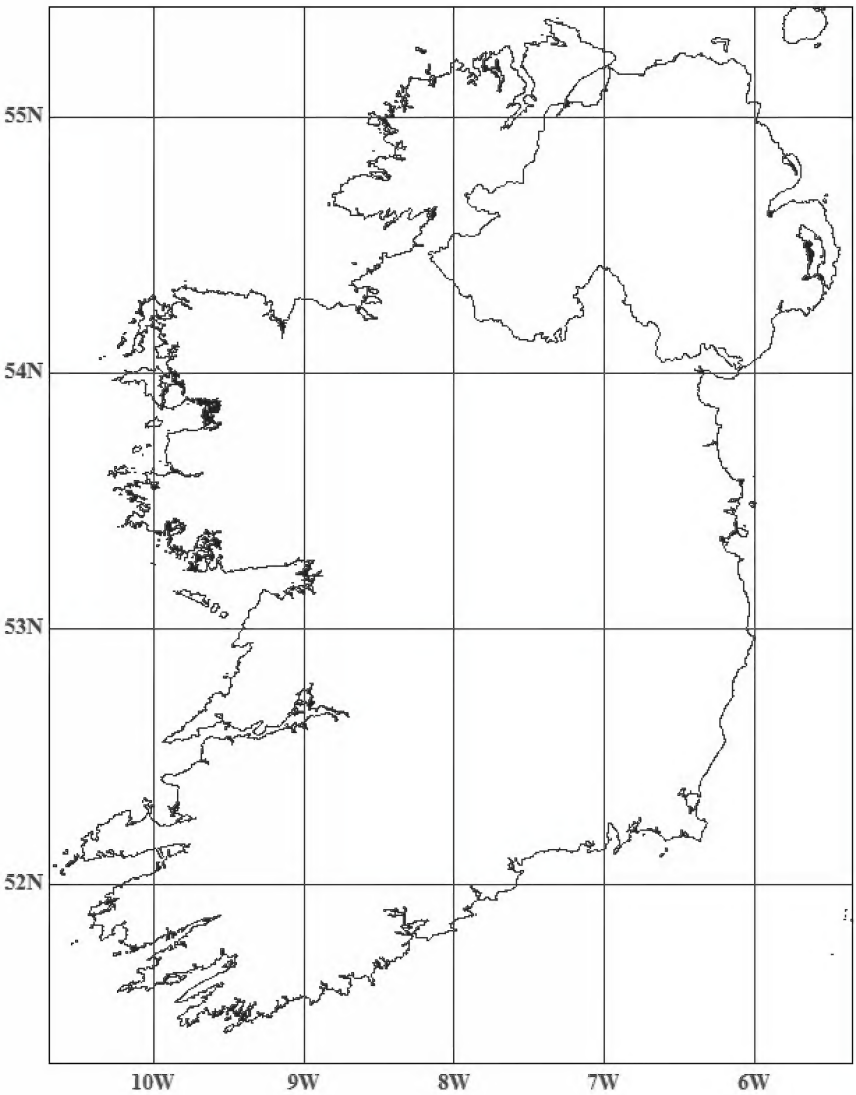

FIGURE 46. The counties of Ireland.

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DISTRIBUTION RECORDS OF IRISH CHIRONOMIDAE (DIPTERA): PART 2 – ORTHOCLADIINAE

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Abstract

This is the second of three papers dealing with records and distribution data of species-level taxa of Chironomidae currently known to occur in Ireland. Information is presented on 226 species-level taxa in the subfamily Orthocladiinae. The majority of the 9,420 records cited have not been published previously.

Key words: Chironomidae, Orthocladiinae, Ireland, records, distribution

Introduction

This is the second of three papers presenting records and distribution data of Chironomidae in Ireland. In Part 1 information was given on 4,360 records of 84 species-level taxa in the subfamilies Buchonomyiinae, Podonominae, Tanypodinae, Telmatogetoninae, Diamesinae and Prodiamesinae (Murray *et al*., 2013). Data is presented in this work, Part 2, on the distribution in Ireland of 226 species-level taxa in the subfamily Orthocladiinae. The majority of the 9,420 records cited have not been published previously. Background information and details of various publications, theses and reports consulted but not cited in Part 2 is given in Murray *et al.* (2013).

Record citation format

The taxonomic sequence of genera follows Ashe and O'Connor (2012) and the revised status of some genus-group taxa in Andersen *et al*. (2013) is adopted. Species are documented alphabetically within genus. Distribution records are cited by County (Fig. 1) and by Hydrometric Area (Fig. 2) since the early life-history stages of the Chironomidae are predominantly aquatic. County names and Hydrometric Area numbers (HA ##) are given in

bold capital font. For further explanation of hydrometric areas see Murray *et al.* (2013). Complementary information provides the water body type and name from which the record derives, district and/or collection site, Irish Grid Reference (in parentheses) given as letter and six figure number where possible, date(s) of record(s), collector and source of record (in parentheses). If the source is a publication, thesis or report it is cited by author and year. Where the source is a personal unpublished record by the collector/determinator then his/her initials are given in parentheses and the "collector" entry is omitted to avoid unnecessary duplication. Where the source is a multi-author citation the initials of the collector/determinator prerdeed the citation.

Abbreviations used in the text

AHH - A. H. Haliday; AF - A. Fitzgerald; AJOS - A. J. O'Sullivan; BC - B. Connolly; BH - B. Healy; BK - B. Kennedy; BPH - B. P. Hayes; CAD - C. A. Duigan; CB - C. Bradley; CCO - C. C. Omoku; CD - C. Dowling; CFH - C. F. Humphries; CNP - Connemara National Park; COK - C. O'Keefe; CP - C. Plant; DAM - D. A. Murray; DEM - D. E. Morgan; d/s - downstream; DJD - D. J. Douglas; EF - E. Fahy; EMcE - E. McEntee; EPA - Environmental Protection Agency; FC - F. Curran; FWE - F. W. Edwards; GF - G. Free; GM - G. Morgan; GNP - Glenveagh National Park; GO - G. Oliver; GPF - G. P. Forde; GW - G. Walton; HA - Hydrometric Area; HD - H. Daoud; IFT - Inland Fisheries Trust; JB - J. Bracken; JC - J. Casey; JNH - J. N. Halbert; JL - J. Lynch; LMcL - L. Mc Larnon; JPOC - J. P. O'Connor; JRB - J-R. Baars; KB - K. Bond; KC - K. Clabby; L - Lough; LF - L. Finnegan; LJH - L. J. Heneghan; MB - M. Berrigan; MC - M. Carroll; MG - M. Grey; MH - M. Holmes; MJC - M. J. Costello; MKQ - M. Kelly-Quinn; MK - M. Kennedy; MOG - M. O'Grady; MS - M. Sommerfield; Mt - Mountain / Mount; NH - N. Hackett; NMI - National Museum of Ireland; NOM - N. O'Maoilideigh; pe - pupal exuviae; PG - P. Gargan; PHG - P. H. Grimshaw; PHL - P. H. Langton; PJA - P. J. Ashe; PMcC - P. McCreesh; POD - P. O'Dwyer; PS - P. Sweeney; R - River; RF - R. French; RH - R. Hernan; RL - R. Little; SC - S. Collins; SF - S. Fahy; SMcB - S. McBean; SR - S. Reilly; SW - S. Wistow; TOF - T. O'Flaherty; UCD - University College Dublin; u/s - upstream; UU - University of Ulster; WM - W. Murray; WEF - W. E. Frost; WMNP - Wicklow Mountains National Park; WT - W. Trodd.

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SUBFAMILY ORTHOCLADIINAE

***Acamptocladius reissi* Cranston and Sæther, 1982**

MAYO: Clare Island - pond east of Maum road, Clare Island (L710863), 20 August 2002 (Murray and Murray, 2003). **WICKLOW: HA 10 -** L. Ouler, Tonelagee (O091023), 8 August 2005, JRB (Murray, 2005).

***Acamptocladius submontanus* (Edwards, 1932)**

CLARE: HA 27 - L. Bunny, Aughrim, south east shore (R377965), 2 May, 7 June 2006 and 11 June 2009, EPA (DAM). L. Cullaun, Corrofin, mid east shore (R317905), 7 June 2006, 16 June and 14 September 2009, EPA (DAM). L. Muckanagh, Tubber, Corrofin, south east shore (R370922), 14 September 2009, EPA (DAM)**: HA 28 -** quarry pond near L. Keagh, Milltown Malbay (R097809), 19 September 2012, DAM/WM (DAM)**: HA 29 -** L. Skeardeen, Kilcorkan (R388991), 7 April 2009, EPA (DAM). **DONEGAL: HA 36 -** L. Golagh, Ballyshannon (G965655), 8 September 2009, EPA (DAM)**: HA 38 -** L. Dunglow, Dunglow, The Rosses, west shore (B782119), 17 June 2009, EPA (DAM). L. Greenan, Loughsalt, Kilmacrennan (C117262), 16 June 2009, EPA (DAM). L. Nabuckan, Grogan More (B850184), 27 July 2005, JRB (Murray, 2005). L. Veagh, north east shore, Glenveagh (C034233), 19 August 1985 (Heneghan and Murray, 1987; Murray, 2005)**: HA 39 -** L. Fern, Millford (C180233), 9 September 2009, EPA (DAM). **GALWAY: HA 30 -** L. Anillaun, Maam Cross (L980470), 8 June and 5 September 2007, EPA (DAM)**: HA 31 -** L. Nahasleam, Maam Cross (L972440), 8 August and 12 September 2006 and 13 September 2007, EPA (DAM). L. Shindilla, Derreennacreeva, Maam Cross, south shore, (L958460), 9 August 2006, also 7 June, 26 July

and 3 September 2007, EPA (DAM). L. Illauntrasna, Glentrasna, Garomna (L888254), 25 July 2007, EPA (DAM)**: HA 32 -** L. Enask, Beaghcauneen (L662468), 6 June 2007, EPA (DAM). L. Pollacappul, Kylemore (L754582), 10 September 2007, EPA (DAM). **KERRY: HA 22 -** Upper Lake, Killarney (V909821), 17 July 2008, EPA (DAM)**: HA 23 -** L. Cam, Castlegregory (Q597079), 29 August 2008, EPA (DAM). **LEITRIM: HA 35 -** L. Nabrack, Crocknagapple (G860477), 4 August 2005, JRB/MC (DAM). **MAYO: HA 32 -** L. Fin, Delphi (L841657), 9 May 2006, EPA (DAM).

***Acricotopus lucens* (Zetterstedt, 1850)**

ANTRIM: HA 4 - Fire dam, Black Hill (D121297), 2 July 2000 (Langton, 2002). Park pond, Carnfunnock (D379069), 20 June 2000 (Langton, 2002). **CAVAN: HA 7 -** L. Mullagh, Mullagh (N680856), 23 May 1968 (Murray, 1972). **CLARE: HA 27 -** L. Muckanagh, south east shore, Tubber, Corrofin (R370922), 11 June and 14 September 2009, EPA (DAM). L. Rosroe, Newmarket on Fergus, north east shore (R449697), 16 September 2009, EPA (DAM). L. Inchiquin, Corrofin (R270895), 6 June 2006, EPA (DAM). **CORK: HA 19 -** Carrigdroihid Reservoir, Ashton (W360703), 16 June 2008, EPA (DAM)**: HA 20 -** R. Bandon, 2.5km d/s Bandon (W516569), 30 June 1980 (Morgan, 1982)**: HA 21 -** L. Reenydonegan, Bantry (W000515), 2 June 1969, NH (Bracken and Murray, 1973). **DERRY: HA 2 -** pool at Roe Valley Park, Limavady (C679201), 9 June 2000 (Langton, 2002). **DONEGAL: HA 39 -** R. Crana, Buncrana (C347328), 15 August 1982 (Hayes, 1991). **GALWAY: HA 30 -** L. Corrib, no data (M1545), 1980, BC (DAM)**: HA 31 -** L. Anaserd, Ballyconneely (L605443), 10 July 2006, EPA (DAM). **KERRY: HA 21 -** R. Inny, Scarriff Bridge (V504696), 24 August 1983 (Hayes, 1991)**: HA 22 -** L. Leane, Killarney: Ross Bay (V945850), 27 August 1987 (Murray, 2005); Brickeen (V937850), 3 July 1973, DJD/DAM (Douglas and Murray, 1980)**: HA 23 -** L. Gill, Castlegregory (Q603139), October 1996, JC (DAM). **KILDARE: HA 9 -** ditch at Lyons Estate, Celbridge (N970287), 18 January 1968 (Murray, 1972). R. Liffey, Straffan Bridge (N924293), 1929, WEF (Humphries and Frost, 1937). **LIMERICK: HA 24 -** L. Gur, Holycross (R646413), 13 June 2009, EPA (DAM). **MAYO: HA 26 -** Loughanboy Turlough, Ballyhaunis (M433816), 16 June 2005, DAM/WM (DAM)**: HA 32 -** L. Glencullin, Delphi, north west shore (L815699), 26 June 2008, EPA (DAM). **HA 33 -** R. Owenmore, Bangor Erris (F863228), 18 August 1983 (Hayes, 1991). Bog pools, Glenamoy (F896345), 1973, CD (Dowling and Murray, 1981): **HA 34 -** L. More, Ballynagoraher (G115044), 4 April 2006, EPA (DAM)**: Clare Island -** pond east of signal tower (L658859), 21 August 2002 (Murray and Murray, 2003; Murray, 2005). **MEATH: HA 8 -** stream, Meadesbrook, Kilmoon (O038594), 14 September 1968 and 22 April 1982 (DAM). **ROSCOMMON: HA 26 -** L. O'Flynn, south east shore, Ballinlough (M585786), 16 June 2005, DAM/WM (DAM). **TIPPERARY: HA 16 -** R. Suir, d/s Thurles (S128581), 22 May 1992 (Murray and Lynch, 1992). **WESTMEATH: HA 26 -** L. Derravarragh, Crookedwood (N468634), 8 February 1967 (Murray, 1972).

***Brillia bifida* (Kieffer, 1909)**

ANTRIM: HA 3 - Kells R, Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002)**: HA 4 -** R. Bush, Conogher Bridge (C963305), 10 September 2000 and R. Bush, Ballyhoe Bridge (D077294), 2 July 2000 (Langton, 2002). R. Glendun, Drumfresky, Cushendun (D193308), 2 July 2000 (Langton, 2002). R. Glenariff (Inver/Glenarif), Cushendall (D215205), 2 July 2000 (Langton, 2002). **CARLOW: HA 12 -** R. Slaney: Rathvilly (S877823), 29 July 1981; Motabower Bridge (S832778), 28 July 1981 and Kildavin (S899597), 28 July 1981 (all Hayes, 1991). R. Derreen, Acann Bridge (S900781), 29 July 1981 (Hayes, 1991)**: HA 14 -** R. Burren tributary, Slievebawn, Mount Leinster (S818556), 8 April 2004, JRB (DAM). **CAVAN: HA 7 -** L. Drumkeery, Baileborough (H663002), 16 July 2007, EPA (DAM). L. Nadreegeal, Ballyjamesduff (N537933), 18 July 2007, EPA (DAM). **CLARE: HA 25 -** R. Bow, east of L. Graney (R663904), 19 April 2004, JRB (DAM)**: HA 28 -** R. Silverhill, east of Milltown Malbay (R096792), 20 April 2004, JRB (DAM). **CORK: HA 19 -** L. Allua, Ballingeary (W180652), 4 April 2008, EPA (DAM)**: HA 20 -** R. Ilen, Drimoleague (W098454), 24 August 1983 (Hayes, 1991). R. Bandon: Long Bridge, Dunmanway (W242631), 20 February 1980 to 17 January 1981; Bealabouy Bridge, Dunmanway (W257514), 20 February 1980 to 17 January 1981; u/s Ballineen (W331537), 20 February to 28 November 1980; Ballineen Bridge (W434538), 20 February 1980 to 17 January 1981; Castle Bernard (u/s Bandon) (W472546), 20 March 1980 to 17 January 1981; 2.5km d/s Bandon (W516569), 20 February 1980 to 17 January 1981 (all Morgan, 1982). **DERRY: HA 2 -** R. Ballykelly, Clagan (C628209) and Ballykelly (C623211), 9 June 2000; R. Owenbeg, Feeny picnic area, Feeny (C645058), 26 June 2000; R. Bessbrook, Limavady (C655212), 9 June 2000; Pool at Roe Valley Park, Limavaddy (C679201), 14 July 2000; R. Roe, Deerpark Wood, Limavaddy (C682203), 9 June 2000 and R. Castle (Castle R.), Ardmore Bridge, Limavaddy (C706207), 9 June 2000, all Langton (2002)**: HA 3 -** Downhill beach stream, Coleraine (C754326), 9 June 2000; R. Aghadowey, Ballybritain Bridge (C859212), 26 May 2000; R. Macosquin, Black Bridge, Ballylintagh (C854256), 26 May 2000; R. Agivey, Glascort Bridge (C907226), 16 July 2000 and R. Moyola, New Bridge, Magherafelt (H955905), 4 July 2000, all Langton (2002). **DONEGAL: HA 1 -** R. Deele, Legland, Raphoe (C136028), 19 July 2000 (Langton, 2002)**: HA 38 -** R. Ray, Muckish Gap (B993268) and Crocnalaragh (B989272), 12 August 1982 (Hayes, 1991). L. Anure, east shore, Loughanure (B818162), 1 April 2010, EPA (DAM). L. Keel, Crolly (B848162), 1 April and 13 August 2009, EPA (DAM). L. Glen, Glen (C105292), 8 September 2009, EPA (DAM). L. Nacung, upper, Dunlewy (B904191), 19 July 2000 and R. Devlin, Dunlewy (B927190), 19 July 2000 (Langton, 2002). Feeder stream to R. Owenveagh, Glenbeagh Cottage (B998175), 4 June 1986 (Heneghan, 1986). R. Owenveagh, u/s L. Veagh, Glenveagh (C000187), April and June 1989 (Hernan, 1991). L. Inshagh track, Glenveagh (C035210), 13 May 1986, LJH (Murray, 2005). R.

Owencarrow near GNP Administration Centre, Glenveagh (C041229), 14 May 1986 (Heneghan, 1986; Murray, 2005). Owenacally stream, Glenveagh (C043226), 19 July 2000 (Langton, 2002). Stream on north west shore, L. Veagh (opposite Castle), Glenveagh (C013213), June 1989 and stream to L. Veagh from Misty L., Glenveagh (C015216), June and November 1989 (Hernan, 1991). Stream at north east of L. Veagh, 50m above lake (C030218), 14 May 1986 (Heneghan, 1986) and April to November 1989 (Hernan, 1991); same stream 250m above lake (C031217), 15 August 1985 (Heneghan, 1986) and April to September 1989 (Hernan, 1991); same stream 350m above lake (C031215), June to September 1989 (Hernan, 1991)**: HA 39 -** R. Swilly (Swilly R.), Newmills, Letterkenny (C125092), 18 July 2000 (Langton, 2002)**: HA 40 -** R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991). **DUBLIN: HA 10 -** Upper Reservoir, Bohernabreena (O095219), 11 May 1949, (Reilly, 1951). R. Glencullen tributary, Glendoo (O160212), 1970, KC (Clabby and Bracken, 1976). **FERMANAGH: HA 35 -** R. Glen (Glen R.), Garrison (G943522), 29 June 2000 (Langton, 2002)**: HA 36 -** R. Finn, Lisnanesnagh Bridge (H544337), 26 June 2000 (Langton, 2002). **GALWAY: HA 30 -** R. Loughkip, Ballyquirk, Moycullen (M224313), 17 August 1981 (Hayes, 1991)**: HA 32 -** R. Owenglin, Clifden (L677506), 18 August 1981 (Hayes, 1991). **KERRY: HA 18 -** R. Blackwater tributary, Gortacloghane, Mullaghanatin Mountain (V754744), 17 April 2004, JRB (DAM)**: HA 21 -** L. Brin, Derreeny (V780775), 10 September 2008, EPA (DAM). R. Owbaun, Dromderalough, Kilgarvan (V971783), 16 April 2004, JRB (DAM)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). L. Doo (Doolough), Muckross Penninsula (V949860), 3 July 1973. Muckross Lake, Coleen Bawn (V950857), 1973 (all Douglas and Murray, 1980). R. Caragh tributary, south east of Glencar (V747802), 17 April 2004, JRB (DAM). R. Clydagh: Caherbarnagh (W202842), u/s Clydagh Bridge (W114826) and Knocknagowan (W187837), all March 1978 to January 1979 (all Ashe, 1982). R. Flesk: d/s Clydagh/Loo confluence (W084814), Garries Bridge (W082835), Flesk Bridge (W034876), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), March 1978 to January 1979 (all Ashe, 1982); White Bridge (V987904), July 1973 (Douglas and Murray, 1980). R. Loo, Aughnanus Bridge, Crohane (W045790), March 1978 to January 1979 (Ashe, 1982)**: HA 23 -** L. Gill, Castlegregory (Q603139), October 1996, J. Casey (DAM). **LAOIS: HA 15 -** R. Nore, Castletown Bridge (S326930), 27 August 1981 (Hayes, 1991). **LEITRIM: HA 35 -** R. Bonet tributary, Manorhamilton (G861447), 22 April 2004, JRB (DAM). **LIMERICK: HA 25 -** R. Mulkear, Dromkeen Bridge (R741480), 8 September 1981 (Hayes, 1991). **LONGFORD: HA 26 -** R. Camlin, Mullagh Bridge, d/s Longford (N116760), June 1965 (Murray, 1965); R. Camlin tributary, Longford Racecourse (N149767), April and June 1965 (Murray, 1965). **MAYO: HA 32 -** stream at "Archeological site 9", Murrisk (L908824), 7 May 2004, DAM/WM (DAM). R. Altahoney, Newport (F950050), 1968-1971, EF

(Fahy and Murray, 1972)**: HA 33 -** R. Glenlassra, Belderg (G023407), 19 August 1983 (Hayes, 1991). Bog pools, Glenamoy (F896345), April 1973, CD (Dowling and Murray, 1981)**: Clare Island -** Fawnglass stream, Fawnglass (L713854) and Knockaveen hillside (L698858), 28 April 2002; Kinnawoneen stream, Fawnglass (L713852), 28 April 2000 and 5 June 2002 (all Murray and Murray, 2003). **MEATH: HA 6 -** R. Dee, Drumconrath (N910894), 27 July 1983 (Hayes, 1991)**: HA 7 -** R. Boyne: Ardsallagh, Magazine weir (N894640), 5 March and 15 March 1981 (DAM); Stackallen Bridge (N917713), Slane Bridge (N965737) and Oldbridge (O045761), 19 July 1989 (DAM). R. Kinnegad, bridge at Kinnegad (N601448) and Kilwarden (N623460), June 1989, JL/DAM (Murray and Lynch, 1991)**: HA 8 -** lawn, Meadesbrook, Kilmoon (O040594), 21 January 2006 (DAM). Stream-pond area, Meadesbrook, Kilmoon (O038594), 27 July 1967 (Murray, 1972) and 21 April 1972, 3 May 1974, 7 May, 8 November and 15 November 2005, 1 January and 26 April 2006, 12 December 2012 (all DAM). **ROSCOMMON: HA 26 -** R. Frances, north of Castlerea (M694860), 28 April 2004, JRB (DAM). R. Owenlobnaglaur tributary, north west of Ballaghaderreen (G616002), 22 April 2004, JRB (DAM). **SLIGO: HA 34 -** R. Moy: Metal Bridge, Tobercurry (G464138) and Annagh (G466123), 30 August 1982 (Hayes, 1991)**: HA 35 -** L. Gill, Sligo (G753335), 3 April 2008, EPA (DAM). **TIPPERARY: HA 15 -** R. Nore, Nore Bridge (S133816), 27 August 1981 (Hayes, 1991)**: HA 16 -** R. Breagagh (Breagagh R.), Archerstown Bridge (S140568), 22 May 1992 (Murray and Lynch, 1992)**: HA 25 -** R. Ollatrim, Moneygall (S042773), 14 April 2004, JRB (DAM). **WESTMEATH: HA 7 -** R. Milltownpass, Miltownpass (N505428), June 1989, JL/DAM (Murray and Lynch, 1991). **WEXFORD: HA 12 -** R. Boro, Dunamore Bridge, Enniscorthy (S963366) also R. Slaney, Clomahon (S933534) and Ballycarney (S967488), 29 July 1981 (Hayes, 1991). R. Sow tributary, Garylough Mill, Screen (T076302) and Movilla stream, Movilla House, Screen (T082311), 6 May 2006, DAM/WM (DAM). Barkers stream, south west of Bunclody (S881573), 8 April 2004, JRB (DAM)**: HA 13 -** R. Corrock tributary, Goff's Bridge, Horetown (S870185), 12 June 2012 (DAM). R. Tintern, Tintern Abbey (S792100), 13 June 2012 (DAM); Estuary bridge, Fethard (S794047), 13 June 2012 (DAM). **WICKLOW: HA 10 -** R. Glencullen, Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989). R. Glenealo, Glendalough (T090962) and outflow from Upper Glendalough Lake, Laragh, WMNP (T109964), 16 July 1996, EMcE/DAM (McEntee, 1997). R. Avonbeg, Meetings Bridge (T188831) and R. Avonmore, Lion Arch Bridge (T194833), 11 July and 27 October 1997 (Curran, 2001). R. Avoca: Whitebridge, Tigroney (T198821) and Avoca Village, 11 July (DAM/FC) and 27 October 1997 (Curran, 2001)**: HA 12 -** R. Derry, Balisland (S978645), 28 July 1981 and Bridgeland (T021744), 29 July 1981 (Hayes, 1991). R. Slaney, Knockgarrigan, Glen of Imail (S936937), Stratford Bridge (S895930) and Kilmurray (S889856), 28 July 1981 (all Hayes, 1991). Askinvillar stream, Kiltealy (S826456), 7 April

2004, JRB (DAM).

***Brillia longifurca* Kieffer, 1921**

CARLOW: HA 12 - R. Slaney, Kilcarry Bridge (S893624), 28 July 1981 (Hayes, 1991). **CORK: HA 18 -** R. Blackwater, Killavullen (W648998), 31 August 1981 (Hayes, 1991)**: HA 20 -** R. Ilen, Madore (W103419) and Hollybrook (W117363), 24 August 1983 (Hayes, 1991). R. Bandon: Long Bridge, Dunmanway (W242631), 25 September and 31 October 1980; Bealabouy Bridge, Dunmanway (W257514), 20 March, 25 August, 25 September and 31 October 1980; u/s Ballineen (W331537), 20 March, 18 April, 30 June, 25 August, 25 September and 31 October 1980; Ballineen Bridge (W434538), 18 April, 30 June, 25 August, 25 September and 31 October 1980; Castle Bernard (u/s Bandon) (W472546), 20 March, 18 April 1980, 27 May, 25 August and 25 September 1980; 2.5km d/s Bandon (W516569), 20 March, 30 June, 25 August, 25 September, 31 October and 28 November 1980 (all Morgan, 1982). **DERRY: HA 2 -** R. Roe, Deerpark Wood, Limavaddy (C682203), 9 June 2000 and Largy Bridge, Limavaddy (C681202), 14 July 2000 (Langton, 2002)**: HA 3 -** R. Bann, Coleraine (C854304), 12 April, 26 April, 3 July and 22 September 1999, also 16 June 2001, 11 April and 25 April 2010 (PHL). **DONEGAL: HA 37 -** R. Eany, d/s Eanybeg confluence (G842815), 10 August 1982 (Hayes, 1991). R. Stragar, Duninkeely (G727792), 10 August 1982 (Hayes, 1991) and R. Stragar, Killybegs (G730787), 23 August 1984 (DAM). L. Eske, Donegal (G973844), 14 July 2009, EPA (DAM)**: HA 38 -** R. Tullaghobeg, Millmount (B933304), 12 August 1982 (Hayes, 1991). R. Owenveagh, u/s L. Veagh, Glenveagh (C000187), June 1989 (Hernan, 1991). Stream, north east L. Veagh, 50m above lake, Glenveagh (C030218), April and November 1989 and same stream 350m above lake (C031215), June 1989 (Hernan, 1991)**: HA 39 -** R. Leannan, Drumaboden (C165218), 12 August 1982 (Hayes, 1991). **DUBLIN: HA 9 -** R. Dodder, Pussy's Leap, Templeogue (O126281), 16 July 1967 (Murray, 1972). **GALWAY: HA 32 - s**tream, near Administration Centre, CNP, Letterfrack (L716573), 16 September 1986 and roadside, Kylemore Road, Letterfrack (L745582), 19 September 1986 (Heneghan, 1987). **KERRY: HA 22 -** R. Caragh, Bealalaw Bridge (V715832), 1975, CD (Dowling *et al.*, 1981). L. Leane, Killarney, Muckross Boathouse (V965866), 8 September 1987, NOM (LJH). R. Flesk, New Bridge, Muckross Road (V968896), 5 September 1972 (DAM) and 28 August 1973 (Douglas and Murray, 1980). R. Flesk, d/s Flesk Bridge (W034876), 27 September 1976, PJA/DAM (Ashe, 1976; Murray, 2005); d/s Clydagh/Loo confluence (W084814), d/s Whitebridge (V987900), u/s L. Leane (V964894), May to October 1978 (all Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), May to October 1978 (Ashe, 1982). **KILDARE: HA 9 -** R. Liffey, Sallins (N881245), 17 July 1983 and Straffan Bridge (N924293), 15 July 1983 (Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Castletown Bridge (S326930), Kilbricken (S362898) and u/s

Durrow (S416787), 27 August 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Burleemslough at Clapper Bridge Ford, u/s Roonagh L., Killeen, Cloonlaur (L754759), 5 August 2004, DAM/WM (DAM). R. Bunowen, Louisburg, u/s bridge (L807807) and R. Bunowen, Laghta Eighter d/s bridge (L852751), 30 September 2004, DAM/WM (DAM). **MEATH: HA 7 -** R. Boyne, Bellinter Bridge (N894625), 21 May 1968 (Murray, 1972); R. Boyne, Ardsallagh, at disused eel weir (N897630), 11 May 1982 (DAM). R. Blackwater, Bloomsbury Bridge, Oristown (N793741), 19 August 1988 (Murray, 1988)**: HA 8 -** stream-pond area, Meadesbrook, Kilmoon (O038594), 10 November 2012 (DAM). **OFFALY**: **HA 25 -** R. Little Brosna, bridge at Ryan's Cross (S053882) and at Milltown Park (S068907), 2 September 1982 (Hayes, 1991). R. Brosna, Cloghan (M046209), 2 September 1982 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627) 16 July 1981 (Hayes, 1991; Murray, 2005) and Ballyforan (M817464), 16 July 1981 (Hayes, 1991). **TIPPERARY: HA 18 -** R. Sheep, Galtymore Mountain (R905185), 7 May 1999, CB (PJA/NMI). **WEXFORD: HA 12 -** R. Boro, Dunamore Bridge, Enniscorthy (S963366), 29 July 1981 (Hayes, 1991). R. Slaney, Clomahon (S933534) and Ballycarney (S967488), 29 July 1981 (Hayes, 1991)**: HA 13 -** R. Corrock tributary, Goff's Bridge, Horetown (S870185), 12 June 2012 (DAM). **WICKLOW: HA 10 -** R. Glencullen, Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989). R. Avonmore, Lion Arch Bridge (T194833), 11 July 1997 (Curran, 2001). R. Avoca, Avoca Village (T203802), 11 July 1997 (Curran and Murray, 2001). R. Glencullen, Brockey (O169207), Glencullen Bridge (O192194), u/s Glencullen Bridge (O190195), d/s Glencullen Bridge (O195193), Knocksink (O217182) and Enniskerry Bridge (O227173), 1970, KC (all Clabby and Bracken, 1976)**: HA 12 -** R. Slaney, Stratford Bridge (S895930) and Kilmurray (S889856), 28 July 1981 (Hayes, 1991).

***Bryophaenocladius aestivus* (Brundin, 1947)**

GALWAY: HA 32 - pond at Administration Centre, CNP, Letterfrack (L715575), 16 September 1986, LJH (Murray, 2005; Murray, 2010).

***Bryophaenocladius femineus* (Edwards, 1929)**

DOWN: HA 5 - Blue Lake, Annalong (J327253), 13 October 2012 (PHL). **MAYO: HA 32 -** R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972).

***Bryophaenocladius furcatus* (Kieffer, 1916)**

DUBLIN: HA 9 - R. Dodder, Glenasmole - u/s Bohernabreena reservoir (O109202), 23 February 1949. Railway foot bridge, Blackrock (O220294), 14 April 1968 (Murray, 1972). **KERRY: HA 22 -** R. Flesk, d/s Whitebridge (V987900), December 1976, PJA (sub *B. virgo* in

Ashe, 1982; Murray, 2005, 2010). **TIPPERARY: HA 18 -** R. Sheep, Galtymore Mountain (R905185), 7 May 1999, CB (PJA/NMI).

***Bryophaenocladius ictericus* (Meigen, 1830)**
DONEGAL: HA 38 - Administration Centre, GNP, Glenveagh (C041228), 28 July 1985, LJH (Murray, 2005, 2010). **KERRY: HA 21 -** Eagles L., Knocknagantee (V674728), 25 April 2005, JRB/MC (Murray, 2005, 2010). **TIPPERARY: HA 18 -** R. Sheep, Galtymore Mountain (R905185), 7 May 1999, CB (PJA/NMI).

***Bryophaenocladius muscicola* (Kieffer, 1906)**
DERRY: HA 3 - R. Bann, Coleraine (C855304), 16 November 2012 (PHL).

***Bryophaenocladius nitidicollis* (Goetghebuer, 1913)**
DUBLIN: HA 9 - bog pool, Featherbed (O120190), April, June and July 1974, CD (Dowling and Murray, 1981). **MAYO: HA 33 -** bog pools, Glenamoy (F896345), April to June, August and November 1973, CD (Dowling and Murray, 1981).

***Bryophaenocladius simus* (Edwards, 1929)**
DERRY: HA 3 - pond, Ballylintagh Road, Coleraine (C854255), 16 May 2004 (Langton, 2005).

***Bryophaenocladius subvernalis* (Edwards, 1929)**
DERRY: HA 2 - R. Curly (Curly R.), Artikelly Bridge, Limavady (C684247), 9 June 2000 (Langton, 2002)**: HA 3 -** R. Bann, Coleraine (C855304), 1 November 1999 (PHL) also 1 January and 8 October 2000 (Langton, 2002). **DONEGAL: HA 38 -** Glenlack, near L. Veagh, GNP (C008190), 19 July 1985 (Heneghan, 1986). Administration Centre, GNP (C041228), 27 July 1985 (Heneghan, 1986). L. Nambraddan, GNP (C022193), 31 July 1985 (Heneghan, 1986). R. Calabber, tributary of R. Owencarrow (C035241), 27 July 1985 and 28 May 1986 (Heneghan, 1986; Murray, 2005)**: HA 39 -** L. Gartan, Church Hill (C055159), 22 July 2009, EPA (DAM). **DUBLIN: HA 9 -** bog pool, Featherbed (O120190), 1950, CFH (Murray, 2005). **GALWAY: HA 29 -** L. Caherglassaun, Gort (M412061), 7 August 2007, EPA (DAM)**: HA 31 -** L. Shindilla, Derreennacreeva, Maam Cross (L958460), 5 April 2006, EPA (DAM)**: HA 32 -** R. Owenglin, Clifden (L677506), 18 August 1981 (Hayes, 1991). **KERRY: HA 21 -** L. Brin, Derreeny (V780775), 10 September 2008, EPA (DAM). Eagles L., Knocknagantee (V674728), 25 April 2005, JRB/MC (DAM)**: HA 22 -** R. Clydagh, u/s Clydagh Bridge (W114826), September to December 1978 (Ashe, 1982). R. Flesk, d/s Clydagh/Loo confluence (W084814),

September to December 1978, PJA (Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), September to December 1978 (Ashe, 1982). **MAYO: HA 32 -** L. Fin, Delphi (L841657), 5 April 2006, EPA (DAM). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627) and Ballyforan (M817464), 16 July 1981 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Carrowneden (G530205) and Cloonacool (G493168), 30 August 1982 (Hayes, 1991).

***Bryophaenocladius vernalis* (Goetghebuer, 1921)**
DONEGAL: HA 38 - GNP, **s**tream, to R. Owenveagh, Glenbeagh Cottage, Glenveagh (B998175), 4 June 1986 (Heneghan, 1986). Misty L., Glenveagh (C014228), 3 June 1986 (Heneghan, 1986; Murray, 2005). Stream, north east shore, L. Veagh, Glenveagh (C033222), 19 August 1985 (Heneghan and Murray, 1987). **GALWAY: HA 32 -** R. Polladirk, CNP, Letterfrack (L741570), 19 September 1986 (Heneghan, 1987).

***Bryophaenocladius xanthogyne* (Edwards, 1929)**
WEXFORD: HA 12 - Crossabeg steam, Crossabeg, Castletown (T023270), 6 May 2006, DAM/WM (Murray, 2010).

***Camptocladius stercorarius* (De Geer, 1776)**
DERRY: HA 3 - Garvagh Wood, Garvagh (C837154), 21 July 2002 (PHL)**: HA 3 -** pond, near R. Macquosin, Ballytinagh Rd, Coleraine (C854255), 18 May 2004 (PHL). **DONEGAL: HA 38 -** L. Veagh, Derrylahane, Glenveagh (C039230), 16 August 1985, POD (Heneghan, 1986). **GALWAY:HA 32 -** woodland, Letterfrack (L715575), 17 September 1986, LJH (Heneghan, 1987). **KILDARE: HA 9 -** R. Liffey, Straffan Bridge (N924293), 1929, WEF (Humphries and Frost, 1937). **LEITRIM: HA 35 -** L. Sandy, Crocknagapple (G891448), 4 August 2005, JRB/MC (DAM). **MAYO: Clare Island -** roadside at Bayview Hotel (L716856), 28 April 2000, DAM/WM (Murray and Murray, 2003). **MEATH: HA 8 -** lawn, Meadesbrook, Kilmoon (O040594), 8 August 1999 (Murray, 2005). **TIPPERARY: HA 18 -** L. Curra, Galtymore Mountain (R867242), 10 August 2005, JRB (DAM). **WESTMEATH: HA 26 -** L. Owel, Mullingar (N421566), 14 and 28 August 1973, NH (Hayes, 1980).

***Cardiocladius capucinus* (Zetterstedt, 1850)**
ANTRIM: HA 4 - R. Glenariff (Inver/Glenarif), Cushendall (D215205), 2 July 2000 (Langton, 2002). **ANTRIM: HA 5 -** Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **DERRY: HA 3 -** R. Bann, Coleraine (C854304), 26 April 1999 (PHL). **KERRY: HA 19 -** R. Bohill, Ballyvourney (W200811), 16 April 2004, JRB (DAM)**: HA 22 -** R. Clydagh, u/s Clydagh Bridge (W114826), May to November 1978 (Ashe, 1982). R. Flesk: d/s Clydagh/Loo

confluence (W084814), May to November 1978; d/s Whitebridge (V987900), May to November 1978; u/s L. Leane (V964894), May 1978, PJA (all Ashe, 1982). R. Torc (Waterfall), Torc Mountain, Killarney (V966847), 15 August 1983 (Ashe, 1987). **LEITRIM: HA 35 -** Glencar Waterfall, Glencar (G763437), 15 August 1983 (Ashe, 1987). **MAYO: HA 32 -** R. Erriff, Ashleigh Falls (L895645), 18 August 1981 (Hayes, 1991; Murray, 2005). **WEXFORD: HA 12 -** R. Boro, Dunamore Bridge, Enniscorthy (S963366), 29 July 1981 (Hayes, 1991). R. Slaney, Clomahon (S933534), 29 July 1981 (Hayes, 1991). **WICKLOW: HA 10 -** R. Glencullen, Knocksink (O218180), 22 April 1987, DEM/DAM (Morgan, 1989). R. Avonmore, Lion Arch Bridge (T194833), 11 July 1997 (Curran, 2001). R. Avoca, Whitebridge, Tigroney (T198821), 11 July 1997 (Curran, 2001).

***Cardiocladius fuscus* Kieffer, 1924**

ANTRIM: HA 3 - L. Neagh, Churchtown Point (J056852), 13 October 2000 (Langton, 2002). **CORK: HA 20 -** R. Bandon, 2.5km d/s Bandon (W516569), 25 September 1980 (Morgan, 1982). **DERRY: HA 3 -** R. Bann, Coleraine (C854304), 18 June to 1 October 1999; 17 May to 30 October 2000, 16 and 30 June 2001, 22 September 2002, 3 and 10 August 2012 (PHL). **KERRY: HA 22 -** L. Leane, Killarney, Brickeen (V937850), 3 July 1973 and O'Sullivans Cascade (V916886), 14 July 1973 (Douglas and Murray, 1980). R. Torc waterfall, Torc Mountain, Killarney (V966847), 1973 (Douglas and Murray, 1980). **KILKENNY: HA 15 -** R. Nore, Threecastles (S458626), 27 August 1981 and Norelands Bridge (S547436), 28 August 1981 (Hayes, 1991). **MEATH: HA 7 -** R. Boyne: Bellinter Bridge (N894625), 21 August 1988, (Murray, 1988) and 11 August 1999, DAM/WM (DAM); Ardsallagh, at St Bridget's Well (N897635), 7 July 1988 (Murray, 1988); Kilcarn Bridge, Navan (N884657), 21 August 1988 (Murray, 1988); railway bridge, Navan (N874674), 5 July 2006 (DAM); Stackallen Bridge (N917713), 17 August 1988 (Murray, 1988) and 19 July 1989 (DAM). **WATERFORD: HA 18 -** R. Blackwater, Lismore (X047988), 31 August 1981, BPH (Hayes, 1991; Murray, 2005). **MAYO: Clare Island -**? L. Poirtin Fuinch, (L706857), 13 July 1999 (Fahy, 2002) [A questionable record since the specimen was reported from an emergence trap on the lake surface -*Cardiocladius* immatures are typically found in fast flowing waters as predators of *Simulium* spp.]

***Chaetocladius* (*Chaetocladius*) *dentiforceps* (Edwards, 1929)**

DUBLIN: HA 9 - bog pools, Featherbed (O120190), March 1974, CD (Dowling, 1975; Dowling and Murray, 1981; Murray, 2005). **MAYO: HA 33 -** bog pools, Glenamoy (F896345), 1973, CD (Dowling and Murray, 1981)**: Clare Island -** Creggan L., Lecarrow, (L689857), 10 August 1998 and 13 October 1998 (Fahy, 2002).

***Chaetocladius* (*Chaetocladius*) *dissipatus* (Edwards, 1929)**

DONEGAL: HA 38 - R. Owenveagh upper, Ballaghgeeha, Glenveagh (B970160), 29 July 1985, LJH (DAM). **DUBLIN: HA 9 -** R. Dodder, Maureens Brook, Upper R. Dodder headwaters (O126176), June 1949 (Reilly, 1951). **KERRY: HA 22 -** R. Caragh, Upper Brida Valley (V785810), 1975, CD (Dowling *et al.*, 1981; Murray, 1996; Murray, 2005).

***Chaetocladius* (*Chaetocladius*) *insolitus* Caspers, 1987**

DERRY: HA 3 - R. Bann, Coleraine (C855304), 1 to 27 January 2000, 6 February 2000 (Langton, 2004) and 23 January 2005 (PHL).

***Chaetocladius* (*Chaetocladius*) *melaleucus* (Meigen, 1818)**

CLARE: HA 28 - L. Acrow, Lisscasey (R193687), 4 April 2006, EPA (DAM). **DONEGAL: HA 37 -** L. Carn (Carn L.), Blue Stack Mountains (G871886), 10 May 2005, JRB/MC (DAM)**: HA 38 -** R. Ray, Muckish Gap (B993268), 12 August 1982 (Hayes, 1991). L. Nabuckan, Grogan More (B850184), 27 July 2005, JRB (DAM). Administration Centre, GNP, Glenveagh (C041228), 27 July 1985 (Heneghan, 1986). R. Owencarrow, vegetation sweep near bridge, GNP, Glenveagh (C041229), 22 July 1985 (Heneghan, 1986)**: HA 40 -** R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991). **FERMANAGH: HA 36 -** R. Belbarrinagh, Belcoo (H112309) and R. Sruh Croppa, Cuilcagh Mountain (H111329), 29 June 2000 (Langton, 2002). **GALWAY: HA 30 -** L. Bofin (M034441) and L. Maumwee (L977458), Maam Cross, 7 June 2007, EPA (DAM)**: HA 31 -** L. Nahasleam, Maam Cross (L972440) and L. Shindilla, Derreennacreeva, west of Maam Cross (L958460), 16 May 2006, EPA (DAM). L. Ballynahinch, Ballynahinch (L777478), 6 June 2007, EPA (DAM)**: HA 32** - stream near park administration centre, CNP, Letterfrack (L717572), 16 September 1986 (Heneghan, 1987). **KERRY: HA 21 -** L. Eirk (Erik L.), Derrygarriff (V881777), 25 April 2005, JRB (DAM). **MAYO: HA 32 -** L. Nahaltora, Cregganbaun (L794745), 30 September 2004, DAM/WM (DAM). R. Bunowen, d/s of bridge at Laghta Eighter (L852751), 30 September 2004, DAM/WM (DAM)**: HA 33 -** stream at Sraheens Bridge, Achill Island (L718983), 6 May 2004 and L. Bunacurry (Bunacurry lake), Achill Island (F695048), 29 September 2004, DAM/WM (DAM)**: Clare Island -** Knocknaveen (L690850), 28 April 2000 (Murray and Murray, 2003; Murray, 2005). Wetland, Ballytouhy (L696882), 20 August 2002; between Maum and Capnagower (L712857), 4 June 2002; between Abbey and Knocknaveen (L689847), 5 June 2002; pond east of signal tower, (L658859), 21 August 2002 (all Murray and Murray, 2003). Creggan L., Lecarrow (L689857), June to October 1998 and June to September 1999 (Fahy, 2002).

***Chaetocladius* (*Chaetocladius*) *perennis* (Meigen, 1830)**

DERRY: HA 1 - inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 23 March, 26 April, 10 May 2001 and 17 May 2002 (PHL)**: HA 3 -** Bishops Gate Garden, Coleraine (C762355), 18 March 2006 (PHL). R. Bann, Coleraine (C854304): 19 January 1999, 17 January and 28 February 2000, 23 January 2005, 1 and 6 January 2006 (PHL). **DONEGAL: HA 1 -** L. Mourne, Ballybofey (H069900), 8 September 2009, EPA (DAM)**: HA 38 -** L. Inshagh track, Glenveagh (C035210), 13 May 1986 (Heneghan, 1986). **DOWN**: **HA 3 -** Upper R. Bann tributary, Poland's Bridge, Banbridge (J193428), 26 March 1998 (PHL). **DUBLIN: HA 9 -** R. Dodder headwaters (Maureen's Brook), Featherbed (O128175), June 1946, CFH (DAM) and 12 September 1982 (PJA/NMI). Bohernabreena aqueduct (O101208), 10 December 1946, CFH (DAM). **GALWAY: HA 32 -** stream near Administration Centre, CNP, Letterfrack (L715573), 18 September 1986 and R. Polladirk, CNP, Letterfrack (L741565), 19 September 1986 (Heneghan, 1987). **KERRY: HA 22 -** L. Acoose, Slievanore, Killorglin (V755854), 19 June 2008, EPA (DAM). R. Flesk, d/s Clydagh/Loo confluence (W084814), 11 December 1978 (PJA/NMI; Murray, 2005). **MAYO: HA 32 -** seafront north of Carrickvegraly Point, Roonagh (L743806), 27 April 2000 (Murray and Murray, 2003)**: Clare Island -** roadside at Bayview Hotel (L716856), 28 April 2000; seafront at Bayview Hotel (L717857), 20 August 2002; stream, Fawnglass (L713854), 28 April 2000 (all Murray and Murray, 2003). Creggan L., Lecarrow, (L689857), 7 July 1999 (Fahy, 2002). **MEATH: HA 7 -** R. Boyne: opposite R. Skane, d/s Bellinter Bridge (N895628), 2-3 May 1982 (DAM). Ardsallagh, near disused eel weir (N897630), 11 May 1982 (DAM)**: HA 8 -** lawn, Meadesbrook, Kilmoon (O040594), 14 May 2005 (Murray, 2005). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168), 30 August 1982 (Hayes, 1991).

***Chaetocladius* (*Chaetocladius*) *piger* (Goetghebuer, 1913)**

KERRY: HA 22 - L. Guitane, Crohane, Killarney (W025846), 27 January 1977 (Murray, 2005). Seepage, Derrycunnihy Wood, Derrycunnihy, Killarney (V909806), 21 March 1988 (Murray, 2005). **KILDARE: HA 7 -** stream inflow to R. Boyne, Leinster Bridge (N665435), 03 March 1991 (DAM). **MAYO: HA 33 -** bog pools, Glenamoy (F896345), May 1973, CD (Dowling and Murray, 1981). **MEATH: HA 8 -** stream-pond area, Meadesbrook, Kilmoon (O038594), 8 and 15 November 2005 and 1 January 2006 (DAM).

***Chaetocladius* (*Chaetocladius*) *suecicus* (Kieffer, 1916)**

DERRY: HA 3 - R. Bann, Coleraine (C854304), 21 December 2012 (Langton, 2013).

***Clunio marinus* Haliday, 1855**

CLARE: HA 27 - seafront at Diamond Rock, Kilkee (Q868600) and Finavarra (M273123), 26 July 1999 (Murray, 2000, 2005). **DONEGAL: HA 38 -** Mulroy Bay (C190295), ex trout stomach, 1974, EF (DAM). Mulroy Bay, near Tawney (C189391), 3 July 1984, MS (PJA/NMI). **DUBLIN: HA 10 -** coastal pool, Sandycove (O260282), 23 May 1996, SW (Murray, 2005)**: HA 9 -** seafront, Killiney (O261250), 28 April 1894, W. F. de V. Kane (Carpenter, 1894). Seafront, Dalkey Island, Dalkey (O277262), 10 December 1951, CFH (DAM). **GALWAY: HA 31 -** seafront, Carna (L776320), June 1977, SC (DAM); Mwenish Bay, Carna (L788317), July 1977, SC (DAM). **KERRY:** Dingle, (Q580150), 1854 (Haliday, 1855). **MAYO: HA 32 -** seafront south of Pier, Roonagh (L744808), 27 April 2000 (Murray and Murray, 2003)**: Clare Island -** seafront marine pool, Bayview Hotel (L717857), 29 April 2000, 5 June and 20 August 2002 (Murray and Murray, 2003). **WEXFORD: HA 13 -** seafront rock pool, Carnsore (T124046), 5 July 1978, BH (DAM). Seafront rock pool, Hook Head (X731973), 13 June 2012 (DAM). **WICKLOW: HA 10 -** seafront pool, Greystones Harbour (O217127), 2 August 2000, DAM/WM (DAM).

***Corynoneura arctica* Kieffer, 1923**

ANTRIM: HA 4 - L. na Cranagh, Fair Head (D179426), 21 March 1999 and Altnahinch Reservoir, Ballymoney (D119234), 22 August 2001 (PHL). **CLARE: HA 27 -** L. Bunny, Aughrim (R377965), 6 April, 4 July, 1 August and 5 September 2006, EPA (DAM). L. Cullaun, Corrofin mid east shore, (R317905), 5 April and 1 August 2006, EPA (DAM). L. Muckanagh, Tubber, Corrofin (R368926), 3 April 2006, EPA (DAM). **DERRY: HA 1 -** Upper Creggan Reservoir, Creggan, Derry (C417173), Lower Creggan Reservoir, Creggan, Derry (C422174) and inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 26 April 2001 (all PHL)**: HA 3 -** R. Bann, Coleraine (C854304), 26 April 2001 (PHL). **DONEGAL: HA 36 -** L. Avehy, Belalt (H043664), 28 March 2004 (PHL)**: HA 37 -** L. Carn (Carn L.), Blue Stack Mountains (G871886), 27 July 2005, JRB (DAM). L. Shinvagh, Carricode (H005675), 28 March 2004 (PHL)**: HA 38 -** L. Nabuckan, Grogan More (B850184), 27 July 2005, JRB (DAM). L. Voriskey, The Rosses (B762176), 19 July 2000 (Langton, 2002). **GALWAY: HA 29 -** L. Rea, east shore, Loughrea (M624153), 25 May 2003 (PHL). L. Cutra, Gort (R485986), 24 May 2003 (PHL)**: HA 30 -** L. Ross, Moycullen (M200363), 25 May 2003 (PHL). **LEITRIM: HA 35 -** L. Lackagh, Boleybrack (G920320), 21 April 2005, JRB (Murray, 2005). **MAYO: HA 32 -** L. Doo, Delphi, north east shore (L834689), 22 August 2002, DAM/WM (DAM). L. Roonagh, Roonagh (L749759), 30 September 2004, DAM/WM (Murray, 2005)**: HA 34 -** bog pond, Bellacorrick (F975198), 10 March 2005, DAM/WM (DAM). **WESTMEATH: HA 36 -** L. Bane, Collinstown (N550712), 26 June, 22 August and 19 September 2006, EPA (EPA).

***Corynoneura carriana* Edwards, 1924**

CLARE: HA 27 - L. Cullaun, Corrofin, mid east shore (R317905), 7 June, 4 July and 1 August 2006, EPA (EPA)**: HA 28 -** L. Lickeen, Kilfenora (R175909), 5 April and 6 September 2006, EPA (DAM)**: HA 29 -** turlough at Turlough Hill, Gortaclare (M288047), 16 November 1985, CAD (Murray, 2005). **FERMANAGH: HA 35 -** R. Glen (Glen R.), Garrison (G943522), 29 June 2000 (Langton, 2002)**: HA 36 -** L. Macnean, upper, Belcoo (H042403), 29 June 2000 (Langton, 2002). **GALWAY: HA 30 -** L. Corrib, no data (M150450), 1980, BC (DAM). **KERRY: HA 21 -** L. Brin, Inchiglanna (V780775), 26 January 1977 (DAM). **MAYO: HA 32 -** R. Bunowen, Louisburg, u/s of bridge (L807807), 30 September 2004, DAM/WM (DAM). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). L. Ballin, north shore, Westport (L996882), 18 September 2008, EPA (DAM). **OFFALY: HA 25 -** bog lake, Turraun (N172185), 3 June 1999 (Murray, 2005). **WESTMEATH: HA 26 -** L. Owel, Mullingar (N421566), May to September 1978 and 1979, NH (Hayes, 1980). **WICKLOW: HA 10 -** R. Glenealo, Glendalough (T090962), 16 July 1996, EMcE/DAM (McEntee, 1997).

***Corynoneura celeripes* Winnertz, 1852**

CAVAN: HA 7 - L. Mullagh, Mullagh (N680856), 23 May 1968 (Murray, 1972). **CORK: HA 19 -** L. Gouganebarra, Inchegeelagh (W009060), 8 May 1966 (Murray, 1972). **GALWAY: HA 29 -** L. Rea, east shore, Loughrea (M624153), 25 May 2003 (PHL). **LEITRIM: HA 35 -** L. Lackagh, Boleybrack (G920320), 21 April 2005, JRB (Murray, 2005). **MAYO: HA 34 -** bog pond, Bellacorrick (F975198), 10 March 2005, DAM/WM (DAM). **MEATH: HA 8 -** stream-pond area, Meadesbrook, Kilmoon (O038594), 10 November 2012 (DAM).

***Corynoneura celtica* Edwards, 1924**

CARLOW: HA 12 - R. Derreen, Acann Bridge (S900781), 29 July 1981 (Hayes, 1991). **CORK: HA 18 -** R. Blackwater: Knocknagree (W159975), Shamrock Bridge, Millstreet (W221935) and Charles Bridge, Millstreet (W248943), 2 September 1981 (Hayes, 1991)**: HA 20 -** R. Ilen, Madore (W103419), 24 August 1983 (Hayes, 1991). **DERRY: HA 2 -** R. Ballykelly, Ballykelly (C623211), 9 June 2000 (Langton, 2002)**: HA 3 -** Balinrees Reservoir inflow, Coleraine (C793307), 9 June 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 19 October 2012 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 7 May 2001 (PHL). **DONEGAL: HA 37 -** R. Stragar, Duninkeely (G727792), 10 August 1982 (Hayes, 1991)**: HA 38 -** R. Owenveagh, Glenbeagh Cottage, Glenveagh (B990178), 30 July 1985 (Heneghan, 1986). **DUBLIN: HA 9 -** R. Dodder, Bohernabreena aqueduct (O101208), 10 June 1968 (Murray, 1972). **FERMANAGH: HA 36 -** R. Sruh Croppa, Cuilcagh Mountain (H111329), 29 June 2000 (Langton, 2002). **GALWAY: HA 32 -** R. Owenglin, Clifden (L677506) and R.

Dawros, Tullywee Bridge, Letterfrack (L730586), 18 August 1981 (Hayes, 1991). **KERRY: HA 18 -** R. Blackwater, Lacknastooka (R153008), 2 September 1981 (Hayes, 1991)**: HA 21 -** R. Inny, Scarriff Bridge (V504696), 24 August 1983 (Hayes, 1991)**: HA 22 -** Muckross Lake, Muckross, Killarney (V950853), 24 June 2008, EPA (DAM). **KILKENNY: HA 15 -** R. Nore: Ballyragget (S445707), Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (all Hayes, 1991). **LAOIS: HA 15 -** R. Nore: Castletown Bridge (S326930) and Kilbricken (S362898), 27 August 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Bunowen, Louisburg, u/s bridge (L807807), 5 August 2004, DAM/WM (DAM). Pond, west of road, Laghta (L845759), 7 May 2004, DAM/WM (Murray, 2005). **ROSCOMMON: HA 26 -** R. Suck, Ballynoe (M693757), 14 August 1981 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Carrowneden (G530205), 30 August 1982 (Hayes, 1991). **WICKLOW: HA 10 -** R. Avonbeg, Glenmalure, Drumgoft Bridge (T105905), 4 August 1983 (Hayes, 1991).

***Corynoneura coronata* Edwards, 1924**

MEATH: HA 8 - R. Nanny, first road bridge u/s Duleek (O035655), 6 June 2006 (DAM). **WESTMEATH: HA 25 -** L. Ennell, Tudenham (N415466), 4 September 1968 (Murray, 1972, 2005).

***Corynoneura edwardsi* Brundin, 1949**

CAVAN: HA 36 - Glasshouse L., Killashandra (H270060), 18 September 2008, EPA (DAM). **CLARE: HA 28 -** L. Keagh, north shore, Milltown Malbay (R100813), 19 September 2012, DAM/WM (DAM). **CORK: HA 20 -** L. Curraghalicky, Drinagh, Dunmanway (W234046), 11 September 2008, EPA (DAM). **DERRY: HA 3 -** Garvagh House, wood, Garvagh (C837154), 22 August 2004 (PHL). **DONEGAL: HA 36 -** L. Golagh, Ballyshannon (G965655), 8 June 2009, EPA (DAM). **MAYO: HA 32 -** L. Doo, Delphi, north east shore (L834689), 22 August 2002, DAM/WM (DAM)**: HA 33 -** Cross L., Drumreagh, Belmullet (F651299), 17 September 2008, EPA (DAM)**: HA 34 -** L. Mallard, Castlebar (M121902), 30 September 2004, DAM/WM (DAM)**: Clare Island -** pond east of signal tower (L658859), 21 August 2002 (Murray and Murray, 2003). Creggan L., Lecarrow, (L689857), July to December 1998, May to October 1999 (Fahy, 2002). L. Poirtin Fuinch, (L706857), 13 and 20 August 1999 (Fahy, 2002). **ROSCOMMON: HA 26 -** L. Glinn, Loughglinn, Castlerea (M629870), 9 September 2008, EPA (DAM). L. Cavetown, Boyle (M832974), 9 September 2008, EPA (DAM). **TIPPERARY: HA 16 -** R. Suir, d/s Thurles (S128581), 22 May 1992 (Murray and Lynch, 1992). **WESTMEATH: HA 26 -** L. Owel, Mullingar (N421566), 24 July 1973, NH (Hayes, 1980; Murray, 2005) and 28 August 1973, NH (Hayes, 1980). **WICKLOW: HA 10 -** R. Glenealo, Glendalough (T090962), 16 July 1996, EMcE/DAM (McEntee, 1997). L. Ouler, Tonelagee

(O091023), 8 August 2005, JRB (DAM).

***Corynoneura gratias* Schlee, 1968**

ANTRIM: HA 4 - R. Bush: Ballyhoe Bridge (D077294), 2 July 2000, Seneirl Bridge (C943362), 16 July 2000 and Conogher Bridge (C963305), 10 September 2000 (all Langton, 2002). **DERRY: HA 2 -** R. Roe, Largy Bridge, Limavaddy (C681202), 14 July 2000 (Langton, 2002)**: HA 3 -** R. Bann, Coleraine (C854304), 18 June 1999 and 6 April 2000 (PHL). **DONEGAL: HA 1 -** R. Deele, Legland, Raphoe (C136028), 19 July 2000 (Langton, 2002)**: HA 39 -** R. Glashagh, Drumbologe, Letterkenny (C096153), 18 July 2000 (Langton, 2002). **FERMANAGH: HA 35 -** R. Glen (Glen R.), Garrison (G943522), 29 June 2000 (Langton, 2002). **MAYO: HA 33 -** Sraheens Bridge, Achill Island (L718983), 6 May 2004, DAM/WM (DAM). **MEATH: HA 8 -** R. Nanny, first road bridge u/s Duleek (O035655), 6 June 2006, DAM/WM (DAM).

***Corynoneura lacustris* Edwards, 1924**

ANTRIM: HA 4 - Benvarden Pond, Benvarden Garden, Derrykeegan (C946334), 15 May 2005 (PHL). **CLARE: HA 27 -** L. Bunny, Aughrim (R377965), 6 April, 7 June, 4 July and 1 August 2006 (EPA). L. Cullaun, Corrofin, mid east shore (R317905), 5 April, 3 May and 5 September 2006 (EPA). L. Muckanagh, Tubber, Corrofin (R368926), 3 April, 2 May, 7 June and 2 August 2006 (EPA). **DONEGAL: HA 36 -** L. Avehy, Belalt (H043664), 17 April 2002 and 28 March 2004 (PHL)**: HA 37 -** L. Carn (Carn L.), Blue Stack Mountains (G871886), 27 July 2005, JRB (DAM)**: HA 38 -** L. Slieve Snaght, Glenveagh (B933153), 9 June 1986 (Heneghan, 1986). R. Devlin, Dunlewy (B927190), L. Altercan, The Rosses (B755158), L. Mulladerg, The Rosses (B775199) and L. Dunglow, east shore, Dunglow (B787117), 19 July 2000 (all Langton, 2002). R. Owenveagh, u/s L. Veagh, Glenveagh (C000187), September 1989 (Hernan, 1991). Stream to L. Veagh, north west shore (opposite Glenveagh Castle), Glenveagh (C013213), June 1989; stream to L. Veagh from Misty L., Glenveagh (C015216), June and November 1989 and stream to L. Veagh, south west shore, Glenveagh (C003194), September 1989 (all Hernan, 1991). **FERMANAGH: HA 36 -** L. Atona, Cuilcagh Mountain (H110294) and L. Macnean, upper, Belcoo (H042403), 29 June 2000 (Langton, 2002). **GALWAY: HA 31 -** L. Ardderry, Maam Cross (L982458), 25 May 2003 (PHL). **KERRY: HA 21 -** L. Eirk (Erik L.), Derrygarriff (V881777), 25 April 2005, JRB (DAM). **LEITRIM: HA 26 -** L. Natire, north of L. Allen (G966340), 14 April 2005, JRB (DAM)**: HA 35 -** L. Lackagh, Boleybrack (G920320), 3 August 2005, JRB (DAM). L. Nabrack, Crocknagapple (G860477), 29 April and 4 August 2005, JRB/MC (DAM). L. Sandy, Crocknagapple (G891448), 28 April 2005, JRB/MC (DAM). **MAYO: HA 34 -** bog pond, Bellacorrick (F975198), 10 March 2005, DAM/WM (DAM). L.

Alone, Ox Mountains (G367157), 22 April 2005, JRB (DAM). **TIPPERARY: HA 18 -** L. Curra, Galtymore Mountain (R867242), 26 May 2005, JRB (DAM). **WESTMEATH: HA 26 -** L. Owel, Mullingar (N421566), July and 7 August 1973, NH (Hayes, 1980)**: HA 36 -** L. Bane, Collinstown (N550712), 26 June 2006, EPA (EPA). **WICKLOW: HA 10 -** L. Bray Lower, Glencree (O141163), 4 June 1986 (DAM), 14 October 1996, MKQ (Murray, 2005) and 16 June 2009, EPA (DAM).

***Corynoneura lobata* Edwards, 1924**

CLARE: HA 27 - L. Cullaun, Corrofin, mid east shore (R317905), 5 April 2006, EPA (EPA). **DERRY: HA 1 -** Upper Creggan Reservoir, Creggan, Derry (C417173), 18 May 2001 (PHL). **DERRY: HA 3 -** inflow to Balinrees Reservoir, Coleraine (C793307), 9 June 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 26 August 1999 (PHL). **DONEGAL: HA 38 -** stream, north east shore, L. Veagh, GNP, 50m above lake (C030218), April 1989; same stream, 250m above lake (C031217), June, September and November 1989; same stream, 350m above lake (C031215), April, June and November 1989 (all Hernan, 1991). **DUBLIN: HA 9 -** bog pool, Featherbed (O120190), April 1974, CD (Dowling, 1975; Dowling and Murray, 1981). **KERRY: HA 21 -** L. Clonee, Kenmare (V800639), 26 July 1968 (Murray, 1972)**: HA 22 -** Muckross Lake, Dinis, Killarney (V939850) and Goleen Bay (V963853), 1973, DJD/DAM (Douglas and Murray, 1980). R. Loo, Aughnanus Bridge, Crohane (W045790), January 1979 (Ashe, 1982). **MAYO: HA 32 -** R. Bunowen, Louisburg, u/s bridge (L807807), 5 August 2004, DAM/WM (DAM). R. Carrowinsky, bridge on Lousiburg to Killadoon road (L770773), 9 May 2003, DAM (Murray, 2005). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972)**: HA 33 -** bog pools, Glenamoy (F896345), June 1973, CD (Dowling, 1975; Dowling and Murray, 1981)**: HA 33 -** pool-stream, Camport, Achill Island (L677982), 29 September 2004, DAM/WM (DAM)**: Clare Island -** Knockaveen hillside (L698858), 28 April 2002 (Murray and Murray, 2003). **MEATH: HA 8 -** lawn, Meadesbrook, Kilmoon (O040594), 1 January 2001 (DAM). **TYRONE: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002).

***Corynoneura scutellata* Winnertz, 1846**

CLARE: HA 28 - L. Acrow, Lisscasey (R193687), 4 April 2006, EPA (DAM). **CORK: HA 19 -** L. Gouganebarra, Inchegeelagh (W009060), 5 April 1966 (Murray, 1972). **DONEGAL: HA 36 -** L. Unshin, Ballyshannon (G946634), 28 March 2004 (PHL)**: HA 38 -** L. Anure, east shore, Loughanure (B818162), 1 April 2010, EPA (DAM). L. Kindrum, Kindrum, Fanad (C186430), 2 April 2009, EPA (DAM). L. Nabuckan, Grogan More (B850184), 10 May 2005, JRB (Murray, 2005). **DUBLIN: HA 9 -** bog pool, Featherbed (O120190), April 1974, CD (Dowling, 1975;

Dowling and Murray, 1981). **FERMANAGH: HA 36 -** L. Lattone, Kiltyclogher (H003456), 29 June 2000 (Langton, 2002)**: HA 36 -** L. Keenaghan, Beleek (G974600), 28 March 2004 (PHL). **KERRY: HA 21 -** L. Brin, Derreeny (V780775), 10 September 2008, EPA (DAM)**: HA 22 -** R. Caragh: Lower Brida Valley (V740805), Bealalaw Bridge (V715832), Blackstones Bridge and d/s R. Acoose confluence (V710864), 1975, CD (all Dowling *et al.*, 1981). **LEITRIM: HA 36 -** L. Garadice, Ballinamore (H202120), 13 October 1965 (Murray, 1972). **LOUTH: HA 6 -** L. Mentrim, south west of Ardee (N913879), 27 June 2005, DAM/WM (DAM). **MAYO: HA 33 -** bog pools, Glenamoy (F896345), January, February, April to August, November, December 1973, CD (Dowling, 1975; Dowling and Murray, 1981)**: HA 34 -** L. Alone, Ox Mountains (G367157), 5 August 2005, JRB/MC (DAM). **ROSCOMMON: HA 26 -** L. Urlar, north east shore, at Abbey (M508900), 10 March 2005, DAM/WM (DAM). **WICKLOW: HA 10 -** L. Dan, Roundwood (O157035), 31 July 1977, DAM (Murray, 2005).

***Corynoneura* Pe2a (sensu Langton and Visser, 2003)**

DONEGAL: HA 37 - L. Carn (Carn L.), Blue Stack Mountains (G871886), 10 May 2005, JRB/MC (DAM)**: HA 38 -** R. Devlin, Dunlewy (B927190), 19 July 2000 (Langton, 2002)**: HA 39 -** R. Swilly (Swilly R.), Newmills, Letterkenny (C125092), 18 July 2000 (Langton, 2002). **KERRY: HA 21 -** L. Brin, Derreeny (V780775), 10 September 2008, EPA (DAM)**: HA 22 -** R. Loo, Aughnanus Bridge, Crohane (W045790), 23 July 1978 (Ashe, 1982). **LEITRIM: HA 35 -** L. Lackagh, Boleybrack (G920320), 3 August 2005, JRB (DAM). **MAYO: HA 32 -** R. Bunowen, Louisburg, u/s bridge (L807807), 7 May 2004, DAM/WM (DAM). R. Owenwee, u/s Aghamore Bridge, Westport (L972817), 5 August 2004, DAM/WM (DAM). Stream at "Archeological site 9", Murrisk (L908824), 7 May 2004, DAM/WM (DAM)**: HA 34 -** L. Castlebar, north shore, Castlebar (M106879), 7 May 2004, DAM/WM (DAM). **MEATH: HA 7 -** R. Boyne, New Bridge, Navan (N873679), 18 August 1988 (Murray, 1988). **TIPPERARY: HA 18 -** L. Curra, Galtymore Mountain (R867242), 10 August 2005, JRB (DAM).

***Corynoneurella paludosa* Brundin, 1949**

DONEGAL: HA 38 - R. Devlin, Dunlewy (B927190), 19 July 2000 (Langton, 2002). **MAYO: Clare Island -** Loughnapucar stream (L658848), 21 August 2002, DAM/WM (Murray and Murray, 2003; Murray, 2005).

***Cricotopus* (*Cricotopus*) *albiforceps* (Kieffer, 1916)**

ANTRIM: HA 4 - R. Brymore (Brymore Water), Brymore Bridge (D162275), 2 July 2000 (Langton, 2002). **CLARE: HA 28 -** R. Annageeragh, Moyglass Bridge, d/s L. Doo (R078725), and R. Doonbeg, Derryard (Q979644), 30 July 1982 (Hayes, 1991). **CORK: HA 20 -** R. Ilen,

Drimoleague (W098454) and R. Ovane, Pierson's Bridge (W023454), 24 August 1983 (Hayes, 1991). R. Bandon, Long Bridge, Dunmanway (W242631), 30 June 1980 (Morgan, 1982). **DERRY: HA 3 -** pond, near R. Macquosin, Ballytinagh Road, Coleraine (C854255), 16 May 2004 (PHL). R. Bann, Coleraine (C854304), 3 May and 24 June 2000, also 11 April 2010 and 10 August 2012 (PHL). **DONEGAL: HA 37 -** R. Eany, d/s Eanybeg confluence (G842815), 10 August 1982 (Hayes, 1991). R. Eanymore, Letterbara Bridge (G883825) and Drumagraa Bridge (G863822), 10 August 1982 (Hayes, 1991). R. Stragar, Duninkeely (G727792), 10 August 1982 (Hayes, 1991)**: HA 38 -** R. Owencarrow, Glenveagh (C041229), 3 June 1986, LJH (DAM). R. Owencarrow, d/s road bridge, Glenveagh (C043235), 18 July 2000 and R. Devlin, Dunlewy (B927190), 19 July 2000 (Langton, 2002)**: HA 40 -** R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991). **GALWAY: HA 31 -** L. Nahasleam, Maam Cross (L972440), 20 June 2006, EPA (DAM). **KERRY: HA 21 -** R. Inny, Scarriff Bridge (V504696), 24 August 1983 (Hayes, 1991). **MAYO: Clare Island -** Creggan L., Lecarrow (L689857), 21 August 2002 (Murray and Murray, 2003; Murray, 2005). **MEATH: HA 7 -** R. Boyne: Scarrif Bridge (N733527) and Newtown, Trim (N815571), 9 July 1981; Stackallen Bridge (N918713), 12 July 1981 (all Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck, Ballyforan (M817464), 16 July 1981 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168), 30 August 1982 (Hayes, 1991)**: HA 35 -** R. Easky, Easky (G377378), 19 August 1983 (Hayes, 1991). **TIPPERARY: HA 16 -** R. Nier, Ballymakee, Newcastle (S154135), 6 May 1999, CB (PJA/NMI)**: HA 18 -** R. Sheep, Galtymore Mountain (R905185), 6 May 1999, CB (PJA/NMI). **WESTMEATH: HA 26 -** L. Owel, Mullingar (N421566), 24 July and 14 August 1973, NH (Hayes, 1980; Murray, 2005). **WEXFORD: HA 12 -** R. Slaney, Clomahon (S933534), 29 July 1981 (Hayes, 1991). **WICKLOW: HA 10 -** R. Avonbeg, Glenmalure, Drumgoft Bridge (T105905), 4 August 1983 (Hayes, 1991)**: HA 12 -** R. Slaney, Stratford Bridge (S895930), 28 July 1981 (Hayes, 1991).

***Cricotopus* (*Cricotopus*) *algarum* (Kieffer, 1911)** **New to Ireland**

CLARE: HA 27 - L. Cullaun, Corrofin mid east shore (R317905), 5 April 2006, EPA (EPA).

***Cricotopus* (*Cricotopus*) *annulator* Goetghebuer, 1927**

ANTRIM: HA 3 - Glenravel Water, Gartnageeragh, Newtown Crommelin (D147154), 2 July 2000 (Langton, 2002). L. Neagh, Churchtown Point (J056852), 22 August 2001 and 31 May 2011 (PHL). R. Kells (Kells R.), Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002)**: HA 4 -** R. Bush: Conogher Bridge (C963305), 10 September 2000, Stranocum (D009307) and Ballyhoe Bridge (D077294) also a riparian pool at Ballyhoe Bridge (D077294), 2 July 2000 (all Langton, 2002). R. Brymore, Brymore Bridge (D162275) and R. Glendun, Drumfresky,

Cushendun (D193308), 2 July 2000 (Langton, 2002). R. Glenaan, Cushendall (D218288), 17 September 2011 (PHL); Altnahinch Reservoir, Ballymoney (D119234), 22 August 2001 (PHL). **CARLOW: HA 12 -** R. Slaney, Kildavin (S899597), 28 July 1981 (Hayes, 1991). **CAVAN: HA 36 -** R. Erne, Dingin's Bridge (N331948), 27 August 1982 (Hayes, 1991). Glasshouse L., Killashandra (H270060), 18 July 2007, EPA (DAM). **CLARE: HA 28 -** R. Creegh, Mountrivers Bridge, Doonbeg (Q991659) and R. Doonbeg, Derryard (Q979644), 30 July 1982 (Hayes, 1991). **CORK: HA 18 -** R. Blackwater: Shamrock Bridge, Millstreet (W221935) and Keale Bridge, Millstreet (W294936), 2 September 1981; Ballymacquirk Bridge, Banteer (W382989), 1 September 1981 (all Hayes, 1991). **HA 20 -** R. Ovane, Pierson's Bridge (W023454), 24 August 1983 (Hayes, 1991). **DERRY: HA 1 -** Upper Creggan Reservoir, Derry (C417173), 10 May 2001 and 17 May 2002 (PHL). Inflow to Upper Creggan Reservoir, Derry (C413171), 23 March, 26 April and 18 May 2001 (PHL)**: HA 2 -** R. Owenbeg, Feeny picnic area, Feeny (C645058), 26 June 2000 (Langton, 2002). R. Bessbrook, Limavady (C655212). R. Roe, Deerpark Wood, Limavaddy (C682203) 9 June and Largy Bridge, Limavaddy (C681202), 14 July 2000 (all Langton, 2002). Curly R., Artikelly Bridge, Limavady (C684247) and Castle R., Ardmore Bridge, Limavady (C706207), 9 June 2000 (Langton, 2002)**: HA 3 -** L. Neagh, unspecified (H9080), no date (McLarnon and Carter, 2000). R. Agivey, ford at Ballynameen (C827148), 14 May 2008 (PHL). R. Aghadowey, Ballybritain Bridge (C859212), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 18 March to 1 October 1999, 19 February to 8 October 2000; 6 February to 30 June 2001, 22 September 2002, 25 April 2010, 27 July, 3 August and 10 August 2012 (all PHL). L. Neagh, Ballyronan (H948862): 10 May and 4 July 2000 (Langton, 2002) also 27 April 1999, 4 May 1999, 2, 7 and 22 May 2011 (all PHL). R. Moyola, New Bridge, Magherafelt (H955905), 7 May 2001 (PHL). **DONEGAL: HA 1 -** R. Deele, Legland, Raphoe (C136028), 19 July 2000 (Langton, 2002)**: HA 36 -** L. Avehy, Belalt (H043664), 27 April 2002 (PHL)**: HA 37 -** R. Eany, d/s Eanybeg confluence (G842815), 10 August 1982 (Hayes, 1991). Stream inflow to L. Shinvagh, Carricode (H005673), 27 April 2002 (PHL)**: HA 38 -** R. Tullaghobeg, Millmount (B933304) and R. Ray, Muckish Gap (B993268), 12 August 1982 (Hayes, 1991). R. Owenveagh upper (Ballaghgeeha), Glenveagh (B970160), 29 July 1985 (Heneghan, 1986). R. Owencarrow, vegetation sweep near bridge at Glenveagh (C041229), 3 June 1986 (Heneghan, 1986). L. Dunlewey, Dunlewy (B926193), R. Devlin, Dunlewy (B927190) and Owennacally stream, Glenveagh (C043226), 19 July 2000 (all Langton, 2002). R. Owencarrow, d/s road bridge, Glenveagh (C043235), 18 July 2000 (Langton, 2002)**: HA 39 -** R. Leannan, Drumaboden (C165218), 12 August 1982 (Hayes, 1991). R. Crana, Buncrana (C347328), 15 August 1982 (Hayes, 1991)**: HA 40 -** R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991). **DOWN: HA 3 -** Upper R. Bann, Hilltown (J238288), 29 May and 28 August 1998 (PHL). R. Rocky (d/s Shanky

confluence), Hilltown (J233277), 26 September 1997 (PHL). **FERMANAGH: HA 35 -** L. Melvin, Garrison (G938518) and Glen R., Garrison (G943522), 29 June 2000 (Langton, 2002)**: HA 36 -** L. Erne, Lower, Brocagh Point, Boa Island (H108626), 27 April 2002 (PHL). L. Macnean, upper, Belcoo (H042403) and L. Macnean, lower, Belcoo (H085384), 29 June 2000 (Langton, 2002). R. Hollybrook, Lisnaskea (H373310), 27 June 2000 (Langton, 2002). **GALWAY: HA 25 -** L. Derg, Woodford (M794964), 24 May 2003 (PHL)**: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 (Hayes, 1991)**: HA 26 -** R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991). L. Corrib, no data (M1545), 1980, BC (DAM). L. Ross, Moycullen (M200363), 25 May 2003 (PHL). R. Owenriff, Oughterard (M112426), 25 May 2003 (PHL)**: HA 32** - Diamond Hill, CNP, Letterfrack (L715565), 18 September 1986 (Heneghan, 1987). **KERRY: HA 21 -** R. Inny, Scarriff Bridge (V504696), 24 August 1983 (Hayes, 1991)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Caragh, d/s Owenroe R. confluence (V720815), 25 October 1999, CB (PJA/NMI). R. Flesk: d/s Clydagh/Loo confluence (W084814), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), April to September 1978 (all Ashe, 1982)**: HA 23 -** R. Owenmore, Boherboy, Cloghane (Q513107), 2 May and 26 October 1999 also 3km u/s Boherboy (Q496083), 2 May 1999, CB (PJA/NMI). **KILDARE: HA 7 -** R. Boyne, Edenderry (N636346) and Ballyboggan (N639402), 9 July 1981 (Hayes, 1991)**: HA 9 -** R. Liffey, Sallins (N881245), 17 July 1983 (Hayes, 1991). **KILKENNY: HA 15 -** R. Nore, Ballyragget (S445707) and Norelands Bridge (S547436), 28 August 1981 (Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Castletown Bridge (S326930), Kilbricken (S362898) and Shanahoe Bridge (S407858), 27 August 1981 (Hayes, 1991). **LEITRIM: HA 26 -** L. Allen, Mountallen, Drumshanbo (G950145), 28 April 2008, EPA (DAM). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514) and Dromkeen Bridge (R741480), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Erriff, Ashleigh Falls (L895645), 18 August 1981 (Hayes, 1991). R. Owenwee, Belclare Bridge, Westport (L959822), 7 May 2004, DAM (Murray, 2005). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). L. Doo, Delphi, south east shore (L844677), 25 June 2008, EPA (DAM). Louisburg (L8080), July 1910, JNH (Grimshaw, 1912)**: HA 33 -** R. Owenmore, bridge at Bangor Erris (F863228), 18 August 1983 (Hayes, 1991). R. Glenlassra, Belderg (G023407), 19 August 1983 (Hayes, 1991). Stream, most westerly in Keem Bay, Achill Island (F560043), 5 August 2004, DAM/WM (DAM)**: HA 34 -** R. Moy, Ballylahan (M227992), 29 August 1982 and Cloongullaun (G348016), 30 August 1982 (Hayes, 1991)**: Clare Island -** L. Poirtin Fuinch (L706857), 2 November 1999 (Fahy, 2002). **MEATH: HA 7 -** R. Boyne: Scarrif Bridge (N733527) and Newtown, Trim (N815571), 9 July 1981 (Hayes, 1991); Stackallen Bridge (N918713), 12 July 1981 (Hayes, 1991) and 19 July 1989 (DAM); Kilcarn Bridge, Navan (N884657), 21 August 1988 (Murray, 1988); Slane Bridge (N965737)

and Oldbridge (O045761), 19 July 1989 (DAM). **OFFALY: HA 25 -** R. Shannon, Shannon Bridge (M967254), 15 August 1981 (Hayes, 1991). R. Little Brosna, Ryan's Cross (S053882), Brosna Bridge (S077938), Sharavogue (S056953) and New Bridge (N016088), 2 September 1982 (all Hayes, 1991). R. Brosna, Cloghan (M046209), 2 September 1982 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck, Ballyforan (M817464) and Castlecoote (M809627), 16 July 1981; Athleague (M825758) and Mount Talbot (M813531), 14 August 1981; Newtown (M844346), 15 August 1981 (all Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Carrowneden (G530205), Cloonacool (G493168), Metal Bridge, Tobercurry (G464138) and Annagh (G466123), 30 August 1982 (all Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430) and R. Easky, Easky (G377378), 19 August 1983 (Hayes, 1991). L. Arrow, Ballinafad (G789123), 11 June 2008, EPA (DAM). **TIPPERARY: HA 15 -** R. Nore, Clonakenny (S116805) and Nore Bridge (S133816), 27 August 1981 (Hayes, 1991). R. Drish, Athlummon Bridge (S177593), 6 July 1992 (Murray and Lynch, 1992)**: HA 16 -** R. Suir, Rossestown Bridge (S134624) and Cabragh (S124562), 6 July 1992 (Murray and Lynch, 1992)**: HA 25 -** R. Kilmastulla, Kilmastulla Bridge (R728698), 3 September 1981 (Hayes, 1991; Murray, 2005). **TYRONE: HA 1 -** Dennet Stream, Essbeg Bridge, Lisnaskee (H384306), 27 June 2000 (Langton, 2002)**: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WESTMEATH: HA 26 -** L. Owel, Mullingar (N421566), 14 August 1973, NH (Hayes, 1980). **WEXFORD: HA 12 -** R. Slaney, Edernline Bridge (S977345), 29 July 1981 (Hayes, 1991)**: HA 13 -** R. Tintern, Tintern estuary bridge (S794099), 13 June 2012 (DAM). **WICKLOW: HA 10 -** R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991)**: HA 12 -** R. Slaney, Knickeen, Glen of Imail (S987948), Knockgarrigan, Glen of Imail (S936937) and Kilmurray (S889856), 28 July 1981 (all Hayes, 1991).

***Cricotopus* (*Cricotopus*) *bicinctus* (Meigen, 1818)**

ANTRIM: HA 3 - R. Clogh, Clough Mills (D105109) 2 July 2000 and Glenravel Water, Gartnageeragh, Newtown Crommelin (D147154), 2 July 2000 (Langton, 2002). L. Neagh: Antrim Bay (J135866), 22 August 2001 (PHL) and Churchtown Point (J056852), 13 October 2000 and 22 August 2001 (Langton, 2002)**: HA 4 -** R. Bush: Seneirl Bridge (C943362), 16 July 2000, Conogher Bridge (C963305), 10 September 2000, Stranocum (D009307) and Ballyhoe Bridge (D077294), 2 July 2000 (all Langton, 2002). R. Brymore (Brymore Water), Brymore Bridge (D162275) and R. Glenariff (Inver), Cushendall (D215205), 2 July 2000 (Langton, 2002). R. Glenarm, Glenarm (D310148), 17 September 2011 (PHL). **CARLOW: HA 12 -** R. Slaney: Motabower Bridge (S832778), Kilcarry Bridge (S893624) and Kildavin (S899597), 28 July 1981 (Hayes, 1991). **CAVAN: HA 36 -** R. Erne: Drumbarry (N462951), 17 August 1982; Dingin's Bridge (N331948), Kilsarin (N362910) and Carrigan (N391935), 27 August 1982 (all

Hayes, 1991)**: HA 7 -** L. Mullagh, Mullagh (N680856), 23 May 1968 (Murray, 1972). L. Ramor, Virginia (N603871), 1 May 1971, DJD/DAM (Douglas, 1971). **CLARE: HA 27 -** L. Dromore, Ruan, Corrofin (R345858), 11 April 2006, EPA (DAM)**: HA 28 -** R. Creegh, Mountrivers Bridge, Doonbeg (Q991659), 30 July 1982 (Hayes, 1991)**: HA 28 -** R. Doonbeg, Derryard (Q979644), 30 July 1982 (Hayes, 1991). **CORK: HA 18 -** R. Blackwater: Knocknagree (W159975), Charles Bridge, Millstreet (W248943) and Keale Bridge, Millstreet (W294936), 2 September 1981; Ballymacquirk Bridge, Banteer (W382989), Roskeen Bridge, Banteer (W444988) and Lombardstown (W463968), 1 September 1981; Killavullen (W648998), 31 August 1981 (all Hayes, 1991)**: HA 20 -** R. Ilen, Madore (W103419) and Hollybrook (W117363), 24 August 1983 (Hayes, 1991). R. Ovane, Pierson's Bridge (W023454), 24 August 1983 (Hayes, 1991). R. Bandon: Long Bridge, Dunmanway (W242631), 27 May, 30 June, 25 September 1980; Bealabouy Bridge, Dunmanway (W257514), 30 June, 25 August, 25 September, 31 October 1980; u/s Ballineen (W331537), 27 May, 30 June, 25 September 1980; Ballineen Bridge (W434538), 18 April, 27 May, 30 June, 25 August, 25 September 1980; Castle Bernard (u/s Bandon) (W472546), 18 April, 27 May, 30 June, 25 August, 25 September, 31 October 1980; 2.5km d/s Bandon (W516569), 27 May, 30 June, 25 August, 25 September 1980 (all Morgan, 1982). **DERRY: HA 1 -** inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 26 April, 10 and 18 May 2001 (PHL)**: HA 2 -** R. Owenbeg, Feeny picnic area, Feeny (C645058), 26 June 2000 (Langton, 2002). R. Roe, Largy Bridge, Limavaddy (C681202), 14 July 2000 (Langton, 2002). R. Curly (Curly R.), Artikelly Bridge, Limavady (C684247) and R. Castle (Castle R.), Ardmore Bridge, Limavady (C706207), 9 June 2000 (Langton, 2002)**: HA 3 -** Downhill beach stream, Coleraine (C754326), 9 June 2000 (Langton, 2002). R. Agivey, Ford at Ballynameen (C827148), 14 June 2008 (PHL). R. Aghadowey, Ballybritain Bridge (C859212), 26 May 2000 and R. Macosquin, Black Bridge, Ballylintagh (C854256), 26 May 2000 (Langton, 2002). Pond near R. Macquosin, Ballytinagh Road, Coleraine (C854255), 16 May 2004 (PHL). R. Bann, Coleraine (C854304), 26 April to 1 November 1999, 3 May to 16 July 2000, 26 April to 30 June 2001, 22 September 2002, 25 April and 2 May 2010, 27 July to 10 August 2012 (all PHL). R. Agivey, Glascort Bridge (C907226), 16 July 2000 (Langton, 2002). L. Neagh: Ballyronan (H948862), 4 July and 13 October 2000 (Langton, 2002) also 22 and 31 May 2011 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 4 July and 13 October 2000 (Langton, 2002). **DONEGAL: HA 1 -** R. Deele, Legland, Raphoe (C136028), 19 July 2000 (Langton, 2002)**: HA 37 -** R. Eanymore, Letterbara Bridge (G883825), 10 August 1982 (Hayes, 1991)**: HA 38 -** R. Tullaghobeg, Millmount (B933304), 12 August 1982 (Hayes, 1991). L. Veagh, GNP, Derrylahane, Glenveagh (C039230), 24 July 1985, LJH (Heneghan, 1986). R. Owencarrow, from web near house, Glenveagh (C041229), 23 July 1986, LJH (Heneghan, 1986; Murray, 2005). L. Nacung, upper,

Dunlewy (B904191), R. Devlin, Dunlewy (B927190), R. Gweedore, Crolly (B827184) and Owennacally stream, Glenveagh (C043226), 19 July 2000 (all Langton, 2002). R. Owenveagh, u/s L. Veagh, Glenveagh (C000187), September 1989 and stream to north west, L. Veagh shore (opposite Castle), Glenveagh (C013213), April, September and November 1989 (Hernan, 1991)**: HA 39 -** R. Leannan, Kilnacrenan (C145200) and Drumaboden (C165218), 12 August 1982 (Hayes, 1991). R. Crana, Buncrana (C347328) and Ballymagan (C379344), 15 August 1982 (Hayes, 1991). R. Glashagh, Drumbologe, Letterkenny (C096153) and R. Swilly (Swilly R.), Newmills, Letterkenny (C125092), 18 July 2000 (Langton, 2002)**: HA 40 -** R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991). **DOWN: HA 3 -** tributary of Upper R. Bann, Dooghary (J137443), 29 May 1997 (PHL). R. Leitrim, Leitrim Bridge, Hilltown (J217285), 27 March 1998 (PHL). R. Muddock, Muddock Bridge, Rathfriland (J235342), 27 August 1998 (PHL). R. Shanky, left fork, Hilltown (J221243), 26 September 1997 (PHL). R. Rocky (d/s R. Shanky confluence), Hilltown (J233277), 26 September 1997 (PHL). Glenaveagh stream, Glenaveagh Bridge (J255284), 26 September 1997 (PHL). **DUBLIN: HA 9 -** R. Dodder, Pussy's Leap, Templeogue (O126281), 16 July 1967 and Landsdown Road Bridge (O180327), 21 April 1967 (Murray, 1972). **FERMANAGH: HA 35 -** R. Glen (Glen R.), Garrison (G943522), 29 June 2000 (Langton, 2002)**: HA 36 -** L. Erne Upper, Crom slipway (H362242) and R. Hollybrook, Lisnaskea (H373310), 27 June 2000 (Langton, 2002). R. Sruh Croppa, Cuilcagh Mountain (H111329), 29 June 2000 (Langton, 2002). **GALWAY: HA 25 -** L. Derg, Woodford (M794964), 24 May 2003 (PHL)**: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 and R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991)**: HA 30 -** R. Owenriff, Oughterard (M112426), 25 May 2003 (PHL)**: HA 31 -** R. Owentouey, Tullywee Bridge, Recess (L873474), 18 August 1981 (Hayes, 1991)**: HA 32 -** R. Owenglin, Clifden (L677506) and R. Dawros, Tullywee Bridge, Letterfrack (L730586), 18 August 1981 (Hayes, 1991). R. Polladirk, Letterfrack (L741570), 19 September 1986, LJH (Heneghan, 1987). **KERRY: HA 18 -** R. Blackwater, Lacknastooka (R153008), 2 September 1981 (Hayes, 1991)**: HA 21 -** R. Inny, u/s Waterville (V525704), 24 August 1983 (Hayes, 1991)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Caragh, Bealalaw Bridge (V715832) and Blackstones Bridge, d/s R. Acoose confluence (V710864), CD (Dowling *et al.*, 1981). L. Leane, Killarney, Castlelough Bay (V966866), 27 June 1973 (Douglas and Murray, 1980). R. Flesk: d/s Clydagh/Loo confluence (W084814), Flesk Bridge (W034876), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), May to July 1978 (all Ashe, 1982). **KILDARE: HA 7 -** R. Boyne, Ballyboggan (N639402), 9 July 1981 (Hayes, 1991)**: HA 9 -** R. Liffey, Sallins (N881245), 17 July 1983 and R. Liffey, Straffan Bridge (N924293), 15 July 1983 (Hayes, 1991). **KILKENNY: HA 15 -** R. Nore, Ballyragget (S445707), Norelands Bridge (S547436) and Brownsbarn Bridge (S618391),

28 August 1981 also R. Nore, Threecastles (S458626), 27 August 1981 (all Hayes, 1991). **LAOIS: HA 15 -** R. Nore: Castletown Bridge (S326930), Kilbricken (S362898), Shanahoe Bridge (S407858), u/s Durrow (S416787), 27 August 1981 and Athanagh (S423763), 28 August 1981 (all Hayes, 1991). **LEITRIM: HA 26 -** L. Boderg, Derrycarne (N013915), 29 July 2008, EPA (DAM). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514), d/s Cappamore (R779504) and Dromkeen Bridge (R741480), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Bunowen, Louisburg, u/s bridge (L807807), 30 September 2004, DAM/WM (DAM). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). L. Fin, Delphi (L841657), 19 May 2005 and 12 July 2006, EPA (DAM). Lough near Westport (L9984), Demesne, Westport (L9984) and Demesne garden, Westport (L9904), July 1911, PHG (all Grimshaw, 1912)**: HA 33 -** R. Owenmore, bridge at Bangor Erris (F863228), 18 August 1983 (Hayes, 1991)**: HA 34 -** R. Moy, Cloongullaun (G348016), 30 August 1982 and Bellanacurra (G403047), 29 August 1982 (Hayes, 1991). **MEATH: HA 6 -** R. Dee, Drumconrath (N910894), 27 July 1983 (Hayes, 1991)**: HA 7 -** R. Boyne, Stackallen Bridge (N918713), 12 July 1981 (Hayes, 1991); R. Boyne: Bellinter Bridge (N894625), 21 May 1968 (Murray, 1972) and 21 August 1988 (Murray, 1988) also 11 and 31 August 1999, DAM/WM (DAM); R. Boyne, Ardsallagh, at St Bridget's Well (N897635), 7 July 1988 (Murray, 1988); Kilcarn Bridge, Navan (N884657), 21 August 1988 (Murray, 1988); New Bridge, Navan (N873679), 18 August 1988 (Murray, 1988); Stackallen Bridge (N917713), 17 August 1988 (Murray, 1988) and 19 July 1989 (DAM); Knowth Weir (N995720) and d/s Oldbridge (O062753), 19 July 1989 (DAM). R. Blackwater: Bloomsbury Bridge, Oristown (N793741), Donaghpatrick (N819723) and Poolboy Bridge, Navan (N871681), 18 August 1988 (Murray, 1988). R. Mongagh, Castlejordan (N590389), June 1989 (Murray and Lynch, 1991). **MONAGHAN: HA 6 -** L. Naglack, Carrickmacross (H853026), 3 May and 14 September 2007, EPA (DAM). L. Monalty, Carrickmacross (H866027), 3 May and 20 July 2007, EPA (DAM). **OFFALY: HA 25 -** R. Shannon, Shannon Bridge (M967254), 15 August 1981 (Hayes, 1991). R. Little Brosna: Ryan's Cross (S053882), Milltown Park (S068907), Brosna Bridge (S077938), Sharavogue (S056953), New Bridge (N016088) and Cloghan (M046209), 2 September 1982 (all Hayes, 1991)**: HA 7 -** Yellow R., tributary to R. Boyne, Rhode d/s Rhode Power Station (N525360), June 1989 (Murray and Lynch, 1991). **ROSCOMMON: HA 26 -** R. Suck: Castlecoote (M809627), Athleague (M825758), Mount Talbot (M813531) and Ballyforan (M817464), 16 July 1981, also Newtown (M844346), 15 August 1981 (all Hayes, 1991). **SLIGO: HA 34 -** R. Moy: Cloonacool (G493168), Metal Bridge, Tobercurry (G464138) and Annagh (G466123), 30 August 1982 (Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430) and R. Easky, Easky (G377378), 19 August 1983 (Hayes, 1991). **TIPPERARY: HA 15 -** R. Nore, Clonakenny (S116805), 27 August 1981 (Hayes, 1991) and 18 August 1982, BPH (Hayes, 1991; Murray,

2005); R. Nore, Nore Bridge (S133816) and Quaker Bridge (S211868), 27 August 1981 (Hayes, 1991)**: HA 16 -** all following records from hydrometric area 16 are by Murray and Lynch (1992): R. Breagagh (Breagagh R.), Archerstown (S140568), 22 May 1992; Brownstown R., Kilclonagh (S167655), 6 July 1992; R. Clover, Twomileborris (S199590), 22 May 1992; R. Drish, Castletown (S207634), 6 July 1992; R. Drish, Boolabeha Bridge (S190619), 6 July 1992; R. Suir, Loughmore (S120670), 6 September 1991; R. Suir, Rossestown Bridge (S134624); R. Suir, d/s Thurles (S128581), 22 May 1992; R. Suir, Cabragh (S124562), 6 July 1992**: HA 25 -** R. Kilmastulla, Kilmastulla Bridge (R728698), 3 September 1981 (Hayes, 1991). **TYRONE: HA 1 -** Dennet Stream, Essbeg Bridge, Lisnaskee (H384306), 27 June 2000 (Langton, 2002)**: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WATERFORD: HA 18 -** R. Blackwater, Ballyduff (W964992) and Lismore (X047988), 31 August 1981 (Hayes, 1991). **WESTMEATH: HA 26 -** R. Brosna, 25m below Cullion fish farm (N431556) and 200m below Cullion fish farm (N432556), May 1990 (Murray, 1990). L. Owel, Mullingar (N421566), 14 August 1973, NH (Hayes, 1980). **WEXFORD: HA 12 -** R. Boro, Dunamore Bridge, Enniscorthy (S963366), 29 July 1981 (Hayes, 1991). R. Slaney: Clomahon (S933534), Ballycarney (S967488) and Edernline Bridge (S977345), 29 July 1981 (all Hayes, 1991)**: HA 13 -** R. Tintern, Tintern Abbey (S792100), 13 June 2012 (DAM). **WICKLOW: HA 10 -** R. Avonbeg, Drumgoft Bridge, Glenmalure (T105905) and R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991). R. Glencullen, Enniskerry Bridge (O227173), 1970, KC (Clabby and Bracken, 1976)**: HA 12 -** R. Slaney, Knockgarrigan, Glen of Imail (S936937), Stratford Bridge (S895930) and Kilmurray (S889856), 28 July 1981 (Hayes, 1991).

***Cricotopus* (*Cricotopus*) *curtus* Hirvenoja, 1973**

ANTRIM: HA 3 - Killylane Reservoir, Magherabane, Larne (J292985), 4 May 1999 (PHL)**: HA 3 -** Glen Burn, Lower Glen Bridge (J263994), 4 May 1999 (PHL)**: HA 4 -** R. Bush, Conogher Bridge (C963305), 10 September 2000 and Stranocum (D009307), 2 July 2000 (Langton, 2002). R. Brymore (Brymore Water), Brymore Bridge (D162275) and R. Glenariff, Cushendall (D215205), 2 July 2000 (Langton, 2002). R. Glenarm, Glenarm (D310148), 17 September 2011 (PHL). **CLARE: HA 28 -** R. Creegh, Mountrivers Bridge, Doonbeg (Q991659), 30 July 1982 (Hayes, 1991). **CORK: HA 20 -** R. Ilen, Madore (W103419), 24 August 1983 (Hayes, 1991; Murray, 2005). R. Bandon: Long Bridge, Dunmanway (W242631), 30 June and 25 September 1980; Bealabouy Bridge, Dunmanway (W257514), 25 September 1980; u/s Ballineen (W331537), 25 September 1980; Ballineen Bridge (W434538), 27 May and 25 September 1980; 2.5km d/s Bandon (W516569), 25 September 1980 (all Morgan, 1982). **DERRY: HA 2 -** R. Owenbeg, Feeny picnic area, Feeny (C645058), 26 June 2000 (Langton,

2002). R. Bessbrook, Limavady (C655212), 9 June 2000 (Langton, 2002). R. Roe, Deerpark Wood, Limavaddy (C682203), 9 June 2000 and Largy Bridge, Limavaddy (C681202), 14 July 2000 (Langton, 2002). Fire dam, Binevenagh Forest, Coleraine (C699304), 18 May 2000 and burn at Largantea picnic area, Formoyle, Coleraine (C738287), 9 June 2000 (Langton, 2002)**: HA 3 -** Downhill beach stream, Coleraine (C754326), 9 June 2000 (Langton, 2002). Balinrees Reservoir, Coleraine (C794300) and inflow to Balinrees Reservoir (C793307), 9 June 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 5 May to 13 October 1999, 3 May to 16 July 2000, 26 April and 16 June 2001, 22 September 2002 (PHL). **DONEGAL: HA 1 -** R. Deele, Legland, Raphoe (C136028), 19 July 2000 (Langton, 2002)**: HA 37 -** R. Eanymore, Letterbara Bridge (G883825), 10 August 1981 (Hayes, 1991)**: HA 38 -** L. Nacung upper, Dunlewy (B904191) and L. Dunlewey, Dunlewy (B926193), 19 July 2000 (Langton, 2002)**: HA 39 -** R. Crana, Buncrana (C347328), 15 August 1982 (Hayes, 1991). R. Glashagh, Drumbologe, Letterkenny (C096153) and R. Swilly (Swilly R.), Newmills, Letterkenny (C125092), 18 July 2000 (Langton, 2002)**: HA 40 -** R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991). **FERMANAGH: HA 35 -** R. Glen (Glen R.), Garrison (G943522), 29 June 2000 (Langton, 2002)**: HA 36 -** R. Finn, Lisnanesnagh Bridge (H544337), 26 June 2000 (Langton, 2002). R. Hollybrook, Lisnaskea (H373310), 27 June 2000 (Langton, 2002). R. Sruh Croppa, Cuilcagh Mountain (H111329), 29 June 2000 (Langton, 2002). **GALWAY: HA 25 -** R. Woodford, Woodford (M732000), 24 May 2003 (PHL). **KERRY: HA 18 -** R. Blackwater, Lacknastooka (R153008), 2 September 1981 (Hayes, 1991)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 24 August 1983 (Hayes, 1991). R. Caragh: Lower Brida Valley (V740805), Bealalaw Bridge (V715832) and outflow from L. Caragh (V713924), 1975, CD (Dowling *et al.*, 1981). R. Flesk, d/s Whitebridge (V987900), July and September 1978 (Ashe, 1982). **KILKENNY: HA 15 -** R. Nore, Brownsbarn Bridge (S618391), 28 August 1981 (Hayes, 1991). **MAYO: HA 33 -** R. Owenmore, Bangor Erris (F863228), 18 August and R. Glenlassra, Belderg (G023407), 19 August 1983 (Hayes, 1991). **MEATH: HA 7 -** R. Boyne, Stackallen Bridge (N917713), 12 July 1981 (Hayes, 1991). **OFFALY: HA 25 -** R. Little Brosna, New Bridge (N016088), 2 September 1982 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168), 30 August 1982 (Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430), 19 August 1983 (Hayes, 1991). **TIPPERARY: HA 16 -** R. Nier, Ballymakee, Newcastle (S154135), 6 May 1999, CB (PJA/NMI). **TYRONE: HA 1 -** Dennet Stream, Essbeg Bridge, Lisnaskee (H384306), 27 June 2000 (Langton, 2002)**: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WEXFORD: HA 13 -** R. Tintern, Tintern, at estuary bridge (S794099), 13 June 2012 (DAM). **WICKLOW: HA 10 -** R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991). R. Glencullen, Knocksink (O218180), 18 May 1987 (Morgan, 1989).

***Cricotopus* (*Cricotopus*) *cylindraceus* (Kieffer, 1908)**

CORK: HA 18 - R. Blackwater, Keale Bridge, Millstreet (W294936), 2 September 1981 and Ballymacquirk Bridge, Banteer (W382989), 1 September 1981 (Hayes, 1991; Murray, 1996)**: HA 20 -** R. Ilen, Madore (W103419) and Hollybrook (W117363), 24 August 1981 (Hayes, 1991; Murray, 1996, 2005). R. Ovane, Pierson's Bridge (W023454), 24 August 1983 (Hayes, 1991; Murray, 1996). **DONEGAL: HA 37 -** R. Oily, Claggen (G751803), 8 August 1982 (Hayes, 1991; Murray, 1996)**: HA 39 -** R. Leannan, Kilnacrenan (C145200), 12 August 1982 and R. Leannan, Claragh (C197210), 13 August 1982 (Hayes, 1991; Murray, 1996). **KERRY: HA 21 -** R. Inny, Scarriff Bridge (V504696) and u/s Waterville (V525704), 24 August 1983 (Hayes, 1991; Murray, 1996). **MAYO: HA 33 -** R. Owenmore, Bangor Erris (F863228), 18 August 1983 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168), 30 August 1982 (Hayes, 1991). **WICKLOW: HA 10 -** R. Avonmore, Castlehoward (T190833) and R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991; Murray, 1996).

***Cricotopus* (*Cricotopus*) *ephippium* (Zetterstedt, 1838)**

GALWAY: HA 32 - L. Aughrusbeg, Cleggan (L557582), 5 June 2007, EPA (DAM). **KERRY: HA 22 -** R. Flesk, d/s Whitebridge (V987900) and d/s New Bridge (V963885), July to September 1978 (Ashe, 1982). **KILKENNY: HA 15 -** R. Clogh, Clogh (S565790), 10 March 1976, CD (DAM). **MAYO: HA 34 -** L. Conn, south basin, Illannaglashy (G207070), 20 August 2008, EPA (DAM)**: Clare Island -** L. Leinapollbauty, Lecarrow (L691856), 5 June 2002 (Murray and Murray, 2003). **OFFALY: HA 25 -** bog lake, Turraun (N150230), 3 June 1999 (Murray, 2005). **WICKLOW: HA 10 -** R. Glencullen, Knocksink (O218180), 18 May 1987 (Morgan, 1989).

***Cricotopus* (*Cricotopus*) *festivellus* (Kieffer, 1906)**

ANTRIM: HA 3 - R. Kells (Kells R.), Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002)**: Rathlin Island -** pool (2) east of lighthouse (D164520), pool (3) east of lighthouse (D156516) and L. Craigmacagan (D154498), 24 July 2000 (all PHL); *Menyanthes* pool (D123515), 6 July 2004 (PHL). **CLARE: HA 25 -** L. Graney (R568907), 20 June 2000 (PHL)**: HA 27 -** L. Bunny, Aughrim (R377965), 2 May 2006, EPA (EPA). **DERRY: HA 3 -** R. Bann, Coleraine (C854304), 22 September 1999, 18 and 25 April, 2 May 2010 (PHL). **DONEGAL: HA 38 -** L. Altercan, The Rosses (B755158) and L. Mulladerg, The Rosses (B775199), 19 July 2000 (Langton, 2002). **FERMANAGH: HA 36 -** Toppedmountain L., Tempo, Enniskillen (H310453), 16 August 2011 (PHL). **GALWAY: HA 25 -** L. Derg, Woodford (M794964), 24 May 2003 (PHL)**: HA 29 -** Ballyturin L., Ballardiggan, Gort (M496005), 24 May 2003 (PHL)**: HA 30 -** L. Corrib, no data (M1545), 1980, BC (DAM)**: HA 31 -** L. Ardderry, Maam Cross

(L998458), 25 May 2003 (PHL). **KERRY: HA 22 -** R. Flesk, d/s Whitebridge (V987900), August 1973, DJD (Douglas and Murray, 1980; Ashe, 1982). Upper Lake, Killarney, Gallavalley (V891817), 1973 (Douglas and Murray, 1980). L. Coomloughra, Caher Mountain, Carrauntoohil (V783849), 26 April 2005, JRB/MC (DAM). L. Leane, Killarney, Muckross Boathouse (V965866), 29 August 1987, NOM (LJH; Murray, 2005). **MAYO: Clare Island -** Creggan L., Lecarrow, (L689857), 10 August 1998, SF (det PHL/NMI). L. Poirtin Fuinch (L706857), 4 August and 4 September 1998, 3 July 1999, 13 and 20 August, 7 September 1999 (Fahy, 2002). **TIPPERARY: HA 18 -** Black L., Aarra Mountains (R738771), 4 May 2005, JRB (Murray, 2005). **TYRONE: HA 1 -** stream inflow to L. Oak, Gortin, Newtownstewart (H498842) and L a'Tirrive, Mulderg, Mountfield (H534786), 16 August 2011 (PHL). **WESTMEATH: HA 26 -** L. Owel, Mullingar (N421566), 14 August 1973, NH (Hayes, 1980).

***Cricotopus* (*Cricotopus*) *flavocinctus* (Kieffer, 1924)**

CLARE: HA 27 - L. Bunny, Aughrim (R377965), 4 July and 1 August 2006, EPA (EPA). L. Cullaun, Corrofin, mid east shore (R317905), 7 June and 1 August 2006, EPA (EPA). L. Muckanagh, Tubber, Corrofin (R368926), 7 June and 1 August 2006, EPA (EPA). **DERRY: HA 3 -** R. Bann, Coleraine (C854304), 24 June 2000 (PHL). **DONEGAL: HA 38 -** L. Scalpachore, Cruit Island (B730216) and L. Mulladerg, Rosses (B775199), 19 July 2000 (Langton, 2002). R. Owenveagh, u/s L. Veagh, Glenveagh (C000187), June 1989 (Hernan, 1991). Inflow stream to north east shore of L. Veagh, Glenveagh, 50m from lake (C030218), June and November 1989; same stream, 250m from lake (C031217), June 1989 and same stream, 350m from lake (C031215), November 1989 (all Hernan, 1991). **GALWAY: HA 29 -** L. Rea, east shore, Loughrea (M624153), 25 May 2003 (PHL)**: HA 32 -** L. Aughrusbeg, Cleggan (L557582), 5 June 2007, EPA (DAM). **MAYO: HA 32 -** R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). **WESTMEATH: HA 36 -** L. Bane, Collinstown (N550712), 26 June, 24 July and 22 August 2006, EPA (EPA).

***Cricotopus* (*Cricotopus*) *fuscus* (Kieffer, 1909)**

CLARE: HA 27 - L. Cullaun, Corrofin mid east shore (R317905), 3 May 2006, EPA (EPA)**: HA 28 -** R. Doonbeg, Derryard (Q979644), 30 July 1982 (Hayes, 1991). **CORK: HA 18 -** R. Blackwater, Ballymacquirk Bridge, Banteer (W382989), 1 September 1981 (Hayes, 1991). **DERRY: HA 3 -** R. Bann, Coleraine (C854304), 10 August 2012 (PHL). **DONEGAL: HA 39 -** R. Crana, Buncrana (C347328), 15 August 1982 (Hayes, 1991). **GALWAY: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 (Hayes, 1991). R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991)**: HA 30 -** L. Corrib, no data (M1545), 1980, BC (DAM). **KERRY: HA 21 -** Erik L., Derrygarriff (V881777), 25 April 2005, JRB (DAM)**: HA**

22 - R. Caragh: Lower Brida Valley (V740805), d/s Owenroe R. confluence (V720815), Blackstones Bridge and d/s R. Acoose confluence (V710864), 1975, CD (all Dowling *et al.*, 1981). L. Kilbrean, Killarney (W005935), 8 September 1969, NH (Bracken and Murray, 1973) and L. Kilbrean, Killarney (W003933), 7 July 1973 (Douglas and Murray, 1980). L. Leane, Killarney, Brickeen (V937850), 3 July 1973 and Inishfallen (V933893), 11 June 1973 (Douglas and Murray, 1980). R. Flesk, d/s Whitebridge (V987900), July 1978 (Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), March 1978 (Ashe, 1982). **KILDARE: HA 7 -** R. Boyne, Ballyboggan (N639402), 9 July 1981 (Hayes, 1991). **KILKENNY: HA 15 -** R. Nore, Norelands Bridge (S547436), 28 August 1981 (Hayes, 1991). **LIMERICK: HA 24 -** Bleach L., Pallaskenry (R441569), 13 June 2009, EPA (DAM)**: HA 25 -** R. Mulkear, Cappamore (R775514) and d/s Cappamore (R779504), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Bunowen, Louisburg (L807807), 5 August 2004, DAM/WM (DAM). **MEATH: HA 6 -** R. Dee, Drumconrath (N910894), 27 July 1983 (Hayes, 1991)**: HA 7 -** R. Boyne: Stackallen Bridge (N918713), 12 July 1981 (Hayes, 1991) and 19 July 1989 (DAM); Slane Bridge (N965737) and Knowth Weir (N995720), 19 July 1989 (DAM). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168) and Metal Bridge, Tobercurry (G464138), 30 August 1982 (Hayes, 1991). **TIPPERARY: HA 16 -** R. Suir, Forte Edward, Cashel (S052458), 19 May 1999, CB (PJA/NMI). R. Drish, Athlummon Bridge (S177593), 6 July 1992 (Murray and Lynch, 1992). R. Suir, Loughmore (S120670), 22 May 1992 and Rossestown Bridge (S134624), 6 July 1992 (Murray and Lynch, 1992)**: HA 25 -** R. Kilmastulla, Kilmastulla Bridge (R728698), 3 September 1981 (Hayes, 1991; Murray, 2005). **WATERFORD: HA 16 -** R. Nier headwaters, Lyre (S276125), 6 May 1999, CB (PJA/NMI). **WESTMEATH: HA 36 -** L. Bane, Collinstown (N550712), 26 April and 26 June 2006, EPA (EPA).

***Cricotopus* (*Cricotopus*) *pallidipes* Edwards, 1929**

DONEGAL: HA 38 - R. Owenveagh, Glenbeagh Cottage, GNP, Glenveagh (B990178), 30 July 1985 (Heneghan, 1986). L. Altercan, The Rosses (B755158), R. Devlin, Dunlewy (B927190), Owennacally stream, Glenveagh (C043226), 19 July 2000 and R. Owencarrow, Glenveagh (C043235), 18 July 2000 (all Langton, 2002). L. Voriskey, The Rosses (B762176), 19 July 2000 (PHL). **GALWAY: HA 32 -** R. Owenglin, Clifden (L677506), 18 August 1981 (Hayes, 1991; Murray, 2005). **KERRY: HA 18 -** R. Blackwater tributary, Gortacloghane, Mullaghanatin Mountain (V754744), 17 April 2004, JRB (DAM)**: HA 21 -** R. Inny, Scarriff Bridge (V504696) and u/s Waterville (V525704), 24 August 1983 (Hayes, 1991)**: HA 22 -** R. Loo, Aughnanus Bridge, Crohane (W045790), December 1978 (Ashe, 1982). **MAYO: HA 32 -** R. Owengarve, Rosgalliv Bridge, Mulranny (L886962), 4 August 2004, DAM/WM (DAM). L. Fin, Delphi (L841657), 28 June and 12 July 2006, EPA (DAM)**: HA 33 -** R. Glenlassra, Belderg

(G023407), 19 August 1983 (Hayes, 1991)**: HA 33 -** stream, west in Keem Bay, Achill Island (F560043), 5 August 2004, DAM/WM (DAM)**: HA 34 -** L. Mallard, Castlebar (M121902), 30 September 2004, DAM/WM (DAM). **WESTMEATH: HA 7 -** L. Lene (N510685), 26 April 2006, EPA (DAM).

***Cricotopus* (*Cricotopus*) *pilosellus* Brundin, 1956**

ANTRIM: Rathlin Island - long pool (D148521) and lough in nature reserve (D095505), 24 July 2000 (Langton, 2002). **DONEGAL: HA 37 -** L. Eske, Donegal (G973844), 17 April and 14 July 2009, EPA (DAM). **FERMANAGH: HA 36 -** L. Erne Upper, Crom Castle, Newtownbutler (H357244), 27 June 2000 (Langton, 2002). L. Lattone, Kiltyclogher (H003456), 29 June 2000 (Langton, 2002). L. Nolughage, Crom Castle, Newtownbutler (H364243), 27 June 2000 (Langton, 2002). **MAYO: HA 34 -** L. Mallard, Castlebar (M121902), 30 September 2004, DAM/WM (DAM)**: Clare Island -** Creggan L., Lecarrow (L689857), 2 November 1999 (Fahy/NMI), 21 August 2002 (Murray and Murray, 2003). L. Poirtin Fuinch (L706857), 13 August 1999 (Fahy, 2002). **TIPPERARY: HA 18 -** Black L., Arra Mountains (R738771), 4 May 2005, JRB (DAM). L. Curra, Galtymore Mountain (R867242), 26 May 2005, JRB (DAM). **WICKLOW: HA 10 -** Vartry Reservoir, Roundwood, north basin (O205050), 6 April 2009, EPA (DAM).

***Cricotopus* (*Cricotopus*) *polaris* Kieffer, 1926**

ANTRIM: HA 4 - Altnahinch Reservoir dam, Ballymoney (D119234), 22 August 2001 (PHL)**: Rathlin Island -** Ally L. (D154497), 5 July 2004 (PHL). **CLARE: HA 27 -** L. Bunny, Aughrim (R377965), 6 April 2006, EPA (EPA). **DERRY: HA 1 -** Upper Creggan Reservoir, Derry (C417173), 23 March, 26 April, 10 and 18 May 2001, 17 May 2002 (PHL); Lower Creggan Reservoir, Derry (C422174), 10 May 2001 (PHL); inflow to Upper Creggan Reservoir, Derry (C413171), 26 April 2001 (PHL). **DONEGAL: HA 36 -** L. Avehy, Belalt (H043664), 27 April 2002 and 28 March 2004 (PHL)**: HA 37 -** Carn L., Blue Stack Mountains (G871886), 27 March 2004 (PHL)**: HA 38 -** L. Altercan, The Rosses (B755158), L. Mulladerg, The Rosses (B775199) and L. Dunglow, east shore, Dunglow (B787117), 19 July 2000 (Langton, 2002)**: HA 39 -** L. Fern, Milford (C182247), 2 June 2000 (Langton, 2002) and 18 August 2011 (PHL). **FERMANAGH: HA 36 -** L. Erne, Lower, Black Bay (H072639), 28 March 2004 (PHL). L. Lattone, Kiltyclogher (H003456), 29 June 2000 (Langton, 2002). L. Macnean, upper, Belcoo (H042403), 29 June 2000 (Langton, 2002). **GALWAY: HA 25 -** R. Woodford, Woodford (M732000), 24 May 2003 (PHL)**: HA 30 -** L. Corrib, no data (M1545), 1980, BC (DAM). **HA 32 -** stream near Administration Centre, CNP, Letterfrack (L716573), 16 September 1986 (Heneghan, 1987) **KERRY: HA 22 -** Five Mile Bridge, Long Range (V935838), 24 March

1988 (Murray, 2005). Doolough, Muckross Penninsula (V949860), 29 September 1987, NOM (LJH)**: HA 34 -** L. Alone, Ox Mountains (G367157), 5 August 2005, JRB/MC (Murray, 2005). **TIPPERARY: HA 18 -** L. Curra, Galtymore Mountain (R867242), 10 August 2005, JRB (DAM). **WESTMEATH: HA 36 -** L. Bane, Collinstown (N550712), 23 May, 26 June and 22 August 2006, EPA (EPA)**: HA 7 -** L. Lene (N510685), 26 April 2006, EPA (DAM).

***Cricotopus* (*Cricotopus*) *pulchripes* Verrall, 1912**

ANTRIM: HA 4 - R. Brymore (Brymore Water), Brymore Bridge (D162275) and R. Glendun (Glendun R.), Drumfresky, Cushendun (D193308), 2 July 2000 (Langton, 2002). **DONEGAL: HA 37 -** R. Gweedore, Crolly Bridge on road N56 (B833199), 22 August 1984 (Murray, 2005). Carn L., Blue Stack Mountains (G871886), 10 May 2005, JRB/MC (DAM). Inflow stream to L. Shinvagh, Carricode (H005673), 27 April 2002 (PHL)**: HA 38 -** R. Ray, Muckish Gap (B993268), 12 August 1982 (Hayes, 1991). R. Devlin, Dunlewy (B927190), 19 July 2000 (Langton, 2002)**: HA 40 -** R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991; Murray, 2005). **DOWN: HA 3 -** R. Carcullion, Hilltown (J213275), R. Rocky (d/s Shanky confluence), Hilltown (J233277) and R. Kinnahalla, Hilltown (J239292), 26 September 1997 (PHL). **DUBLIN: HA 9 -** R. Dodder, Bohernabreena aqueduct (O101208), 21 May 1967 (DAM); R. Dodder, headwaters (Maureen's Brook), Featherbed (O128175), 29 August 1981, PJA (PJA/NMI). **FERMANAGH: HA 36 -** R. Sruh Croppa, Cuilcagh Mountain (H111329), 29 June 2000 (Langton, 2002). **GALWAY: HA 32 -** Glenmore, Letterbreckaun, Letterfrack, CNP (L750554), 21 September 1986, LJH (Heneghan, 1987). **KERRY: HA 22 -** R. Caragh, d/s Owenroe R. confluence (V720815), 25 October 1999, CB (PJA/NMI). R. Owenreagh, Gearrhameen (V875798), 1973 (Douglas and Murray, 1980)**: HA 23 -** L. Cam, Castlegregory (Q597079), 18 September 2008, EPA (DAM). **MAYO: HA 32 -** R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). L. Doo, Delphi, west shore (L833680), 25 August 2008, EPA (DAM)**: Clare Island -** R. Dorree, 100m above sea, Maum (L708865), 28 April 2000, DAM/WM (Murray and Murray, 2003). **MEATH: HA 7 -** R. Boyne, New Bridge, Navan (N873679), 18 August 1988, DAM (Murray, 1988). **TIPPERARY: HA 18 -** L. Curra, Galtymore Mountain (R867242), 26 May 2005, JRB (DAM). **TYRONE: HA 1 -** R. Glenelly, Leaghs Bridge, Mullaghsallagh (H695940), 17 August 2011 (PHL).

***Cricotopus* (*Cricotopus*) *similis* Goetghebuer, 1921**

ANTRIM: HA 4 - R. Bush, Ballyhoe Bridge (D077294), 2 July 2000 (Langton, 2002). **CORK: HA 20 -** R. Bandon: Long Bridge, Dunmanway (W242631), 27 May to 25 September 1980; Bealabouy Bridge, Dunmanway (W257514), 25 September 1980; u/s Ballineen (W331537), 31 October 1980 (all Morgan, 1982). **DERRY: HA 3 -** R. Agivey, Garvagh (C838154), 30 May

2002 (PHL). R. Bann, Coleraine (C854304), 30 September and 8 October 2000 (PHL). **DONEGAL: HA 37 -** R. Eanymore, Drumagraa Bridge (G863822), 10 August 1982 (Hayes, 1991)**: HA 38 -** R. Ray, Crocnalaragh (B989272), 12 August 1982 (Hayes, 1991). L. Nacung, upper, Dunlewy (B904191); R. Devlin, Dunlewy (B927190); R. Owencarrow, d/s road bridge, Glenveagh (C043235) and L. Nadourcan, Glenveagh (C054228), 18 July 2000 (all Langton, 2002)**: HA 39 -** R. Leannan, Claragh (C197210), 13 August 1982 and R. Crana, Buncrana (C347328), 15 August 1982 (Hayes, 1991). **DOWN: HA 3 -** R. Rocky, Hilltown (J242268), 26 September 1997 (PHL). **GALWAY: HA 30 -** R. Owenriff, Oughterard (M112426), 25 May 2003 (PHL)**: HA 31 -** R. Owentouey, Tullywee Bridge, Recess (L873474), 18 August 1981 (Hayes, 1991). L. Shindilla, Derreennacreeva, Maam Cross (L958460), 26 July 2007, EPA (DAM). L. Ballynahinch, Ballynahinch (L777478), 6 June 2007, EPA (DAM)**: HA 32 -** R. Owenglin, Clifden (L677506) and R. Dawros, Tullywee Bridge, Letterfrack (L730586), 18 August 1981 (Hayes, 1991). **KERRY: HA 21 -** R. Inny, u/s Waterville (V525704), 24 August 1983 (Hayes, 1991). L. Brin, Derreeny (V780775), 10 September 2008, EPA (DAM)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991; Murray, 2005). R. Behy, Ballynakilly (V646867), 25 October 1999, CB (PJA/NMI). R. Caragh: Lower Brida Valley (V740805), Blackstones Bridge, d/s R. Acoose confluence (V710864), CD (Dowling *et al.*, 1981). R. Clydagh, u/s Clydagh Bridge (W114826) and Knocknagowan (W187837), May to October 1978 (Ashe, 1982). R. Flesk, d/s Whitebridge (V987900), 27 July 1976, PJA/DAM (Ashe, 1977); R. Flesk: d/s Clydagh/Loo confluence (W084814), Garries Bridge (W082835), Flesk Bridge (W034876), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), May to October, 1978 (all Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), May to October 1978 (Ashe, 1982). **MAYO: HA 32 -** R. Carrowinsky, bridge on Lousiburg to Killadoon Road (L770773), 9 May 2003, DAM/WM (Murray, 2005). R. Bunowen, Louisburg (L807807), 7 May, 5 August and 30 September 2004, DAM/WM (DAM). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972)**: HA 33 -** R. Owenmore, Bangor Erris (F863228), 18 August 1983 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168) and Metal Bridge, Tobercurry (G464138), 30 August 1982 (Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430) and R. Easky, Easky (G377378), 19 August 1983 (Hayes, 1991). **TYRONE: HA 1 -** Dennet Stream, Essbeg Bridge, Lisnaskee (H384306), 27 June 2000 (Langton, 2002). **WICKLOW: HA 10 -** R. Avonmore, Castlehoward (T190833), 4 August 1983 (Hayes, 1991); R. Avonmore, Lion Arch Bridge (T194833), 11 July and 27 October 1997 (Curran, 2001). R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991) and 11 July 1997 (Curran, 2001); R. Avoca, Avoca Village (T203802), 11 July 1997, FC (Curran and Murray, 2001). R. Avonbeg, Meetings Bridge (T188831), 11 July 1997 and 19 July 2000 (Curran, 2001)**: HA 12 -** R. Slaney: Knickeen, Glen of Imail (S987948),

Knockgarrigan, Glen of Imail (S936937) and Stratford Bridge (S895930), 28 July 1981 (Hayes, 1991).

***Cricotopus* (*Cricotopus*) *tibialis* (Meigen, 1804)**

CAVAN: HA 7 - L. Mullagh, Mullagh (N680856), 23 May 1968 (Murray, 1972). L. Ramor, Virginia (N603871), May 1971, DJD/DAM (Douglas, 1971). **KERRY: HA 22 -** L. Leane, Killarney: Castlelough Bay (V966866), 27 June 1973 (Douglas and Murray, 1980) and Muckross Boathouse (V965866), 1 September 1987, NOM (LJH). Muckross Lake, Killarney, Dundag Bay (V964858), 1973 (Douglas and Murray, 1980). L. Kilbrean, Killarney (W005935), 8 September 1969, NH (Bracken and Murray, 1973). **LIMERICK: HA 24 -** Bleach Lake, Pallaskenry (R441569), 13 June 2009, EPA (DAM). **MAYO: HA 32 -** R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). Knappagh, Westport (L9880), lough near Westport (L9984) and Clogher L., Westport (M035884), all July 1911 (all Grimshaw, 1912)**: HA 34 -** L. More, Ballynagoraher (G115044), 4 April 2006, EPA (DAM)**: Clare Island -** no location data (L6885), July 1910, PHG (Grimshaw, 1912). **MEATH: HA 7 -** R. Boyne, Bellinter Bridge (N894625), 21 May 1968 (Murray, 1972). **WESTMEATH: HA 25 -** L. Ennell, Tudenham (N415466), 4 September 1968 (Murray, 1972). **WEXFORD: HA 13 -** R. Corrock tributary, Goff's Bridge, Horetown (S870185), 12 June 2012 (DAM).

***Cricotopus* (*Cricotopus*) *tremulus* (Linnaeus, 1758)**

ANTRIM: HA 3 - Clogh R., Clough Mills (D105109) and Glenravel Water, Gartnageeragh, Newtown Crommelin (D147154), 2 July 2000 (Langton, 2002). R. Kells (Kells R.), Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002). Glen Burn, Lower Glen Bridge (J263994), 4 May 1999 (PHL)**: HA 4 -** R. Bush, Stranocum (D009307) and Ballyhoe Bridge (D077294), 2 July 2000 (Langton, 2002). R. Brymore, Brymore Bridge (D162275) and R. Glendun, Drumfresky, Cushendun (D193308), 2 July 2000 (Langton, 2002). **CARLOW: HA 12 -** R. Slaney, Motabower Bridge (S832778), 28 July 1981 (Hayes, 1991). **CLARE: HA 28 -** R. Creegh, Mountrivers Bridge, Doonbeg (Q991659), 30 July 1982 (Hayes, 1991). **CORK: HA 18 -** R. Blackwater: Knocknagree (W159975) and Charles Bridge, Millstreet (W248943), 2 September 1981 and Lombardstown (W463968), 1 September 1981 (all Hayes, 1991)**: HA 20 -** R. Bandon: Bealabouy Bridge, Dunmanway (W257514), 25 August and 25 September 1980; u/s Ballineen (W331537), 27 May to 31 October 1980; Ballineen Bridge (W434538), 18 April to 25 September 1980; Castle Bernard (u/s Bandon) (W472546), 20 March to 31 October 1980; 2.5km d/s Bandon (W516569), 20 March and 27 May 1980 to 17 January 1981 (all Morgan, 1982). **DERRY: HA 2 -** R. Owenbeg, Feeny picnic area, Feeny (C645058), 26 June 2000 (Langton, 2002). R. Roe, Deerpark Wood, Limavaddy (C682203), 9 June 2000 and Largy

Bridge, Limavaddy (C681202), 14 July 2000 (Langton, 2002). R. Curly (Curly R.), Artikelly Bridge, Limavady (C684247) and R. Castle (Castle R.), Ardmore Bridge, Limavady (C706207), 9 June 2000 (Langton, 2002)**: HA 3 -** R. Aghadowey, Ballybritain Bridge (C859212), 26 May 2000 (Langton, 2002). Pond, near R. Macquosin, Ballytinagh Road, Coleraine (C854255), 16 May 2004 (PHL). R. Bann, Coleraine (C854304), 12 April, 20 and 30 May, 1 October 1999, 3 and 25 May, 13 June 2000, 16 June 2001, 11 April 2010, 10 and 17 August 2012 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 4 July 2000 (Langton, 2002). **DONEGAL: HA 1 -** R. Deele, Legland, Raphoe (C136028), 19 July 2000 (Langton, 2002)**: HA 37 -** R. Eanymore, Letterbara Bridge (G883825), 10 August 1982 (Hayes, 1991)**: HA 38 -** R. Tullaghobeg, Millmount (B933304), 12 August 1982 (Hayes, 1991). R. Devlin, Dunlewy (B927190), 19 July 2000 and R. Owencarrow, d/s road bridge, Glenveagh (C043235), 18 July 2000 (Langton, 2002). R. Owenveagh, u/s L. Veagh, GNP, Glenveagh (C000187), September 1989 and inflow stream to north east shore of L. Veagh, 250m from lake, Glenveagh (C031217), September 1989 (Hernan, 1991)**: HA 39 -** R. Crana, Buncrana (C347328), 15 August 1982 (Hayes, 1991). R. Glashagh, Drumbologe, Letterkenny (C096153), 18 July 2000 (Langton, 2002). **DOWN: HA 3 -** R. Leitrim, Leitrim Bridge, Hilltown (J217285), 27 August 1998 (PHL). Upper R. Bann, Hilltown (J238288), 29 May and 27 August 1998 (PHL). R. Rocky (d/s Shanky confluence), Hilltown (J233277), 26 September 1997 (PHL). **GALWAY: HA 30 -** R. Owenriff, Oughterard (M112426), 25 May 2003 (PHL)**: HA 32 -** R. Owenglin, Clifden (L677506) and R. Dawros, Tullywee Bridge, Letterfrack (L730586), 18 August 1981 (Hayes, 1991). **KERRY: HA 22 -** R. Annascaul, Annascaul (Q593017), 19 April and 2 July 1981 (Hayes, 1991). R. Caragh, L. Caragh outflow (V713924), 1975, CD (Dowling *et al.*, 1981). R. Clydagh: u/s Clydagh Bridge (W114826), Knocknagowan (W187837) and R. Loo, Aughnanus Bridge, Crohane (W045790), April to October 1978 (Ashe, 1982). R. Flesk: d/s Clydagh/Loo confluence (W084814), Flesk Bridge (W034876), April to October 1978 (Ashe, 1982); White Bridge (V987904), 29 May 1973 (Douglas and Murray, 1980), d/s Whitebridge (V987900), 15 October 1978 (Ashe, 1982); u/s New Bridge (V978900), 30 May 1973 (Douglas and Murray, 1980); d/s New Bridge (V963885) and u/s L. Leane (V964894), April to October 1978 (Ashe, 1982). R. Owenreagh, Gearrhameen (V875798), 1973 (Douglas and Murray, 1980). L. Leane, Killarney, Muckross Boathouse (V965866), 1 September 1987, NOM (LJH). **KILDARE: HA 9 -** R. Liffey, Sallins (N881245), 17 July 1983 (Hayes, 1991). **KILKENNY: HA 15 -** R. Nore, Threecastles (S458626), 27 August 1981, Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Kilbricken (S362898), 27 August 1981 (Hayes, 1991). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514) and d/s Cappamore (R779504), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Bunowen, Louisburg, u/s bridge (L807807), 7 May 2004, DAM/WM

(DAM). R. Owenwee, u/s Aghamore Bridge, Westport (L972817), 8 May 2003, DAM (Murray, 2005). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). **MEATH: HA 7 -** R. Blackwater, Bloomsbury Bridge, Oristown (N793741), 19 August 1988 (Murray, 1988). **OFFALY: HA 25 -** R. Little Brosna, New Bridge (N016088), 2 September 1982 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627), 16 July 1981 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Metal Bridge, Tobercurry (G464138), 30 August 1982 (Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430), 19 August 1983 (Hayes, 1991). **TYRONE: HA 1 -** Dennet Stream, Essbeg Bridge, Lisnaskee (H384306), 27 June 2000 (Langton, 2002). R. Glenelly, Crannagh Bridge, Crannagh (H594926), 17 August 2011 (PHL)**: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WATERFORD: HA 18 -** R. Blackwater, Ballyduff (W964992), 31 August 1981 (Hayes, 1991). **WEXFORD: HA 12 -** R. Boro, Dunamore Bridge, Enniscorthy (S963366) and R. Slaney, Ballycarney (S967488), 29 July 1981 (Hayes, 1991). **WICKLOW: HA 10 -** R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991) and 11 July 1997 (Curran, 2001); R. Avoca, Avoca Village (T203802), 11 July 1997 (Curran and Murray, 2001). R. Avonbeg, Meetings Bridge (T188831) and R. Avonmore, Lion Arch Bridge (T194833), 11 July 1997 (Curran, 2001). R. Glencullen, Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989)**: HA 12 -** R. Derry, Bridgeland (T021744), 29 July 1981 (Hayes, 1991). R. Slaney: Knickeen, Glen of Imail (S987948), Knockgarrigan, Glen of Imail (S936937) and Kilmurray (S889856), 28 July 1981 (Hayes, 1991).

***Cricotopus* (*Cricotopus*) *triannulatus* (Macquart, 1826)**

ANTRIM: HA 4 - R. Bush, Conogher Bridge (C963305), 10 September 2000 (Langton, 2002). **CAVAN: HA 36 -** R. Erne, Kilsarin (N362910), 27 May 1982; Carrigan (N391935), 27 August 1982 and Drumbarry (N462951), 17 August 1982 (all Hayes, 1991)**: HA 7 -** L. Nadreegeal, Ballyjamesduff (N537933), 17 September 2007, EPA (DAM). **CLARE: HA 28 -** R. Doonbeg, Derryard (Q979644), 18 July 1981, BPH (Hayes, 1991; Murray, 2005). **CORK: HA 18 -** R. Blackwater: Killavullen (W648998), 31 August 1981; Lombardstown (W463968), 1 September 1981; Knocknagree (W159975), Shamrock Bridge, Millstreet (W221935), Charles Bridge, Millstreet (W248943), Keale Bridge, Millstreet (W294936), 2 September 1981 (all Hayes, 1991)**: HA 20 -** R. Bandon: Bealabouy Bridge, Dunmanway (W257514), 25 August 1980; Ballineen Bridge (W434538), 18 April to 25 September 1980; Castle Bernard (u/s Bandon) (W472546), 18 April to 25 September 1980; 2.5km d/s Bandon (W516569), 18 April to 25 September 1980 (all Morgan, 1982). **DERRY: HA 3 -** R. Bann, Coleraine (C854304): 7 September 1999, 13 June to 8 October 2000, 26 April, 16 and 30 June 2001, 7 August 2012 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 4 July 2000 (Langton, 2002).

DONEGAL: HA 38 - R. Tullaghobeg, Millmount (B933304) and R. Ray, Muckish Gap (B993268), 12 August 1982 (Hayes, 1991). R. Owenveagh, Glenbeagh Cottage, GNP, Glenveagh (B990178), 30 July 1985 (Heneghan, 1986)**: HA 39 -** R. Leannan, Drumaboden (C165218), 12 August 1982 (Hayes, 1991). R. Crana, Buncrana (C347328) and Ballymagan (C379344), 15 August 1982 (Hayes, 1991). R. Swilly, Newmills, Letterkenny (C125092), 18 July 2000 (Langton, 2002)**: HA 40 -** R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991). **DUBLIN: HA 9 -** R. Dodder, Clonskeagh Bridge (O174306), 16 July 1967 (Murray, 1972). **GALWAY: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 and R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991)**: HA 30 -** R. Cregg, Addergsole Bridge (M324350) and R. Grange, Grange Bridge (M428498), 16 August 1981 also R. Loughkip, Ballyquirk, Moycullen (M224313), 17 August 1981 (Hayes, 1991)**: HA 31 -** R. Owentouey, Tullywee Bridge, Recess (L873474), 18 August 1981 (Hayes, 1991)**: HA 32 -** R. Owenglin, Clifden (L677506), 18 August 1981 (Hayes, 1991). R. Polladirk, Letterfrack (L741565), 19 September 1986 (Heneghan, 1987). **KERRY: HA 18 -** R. Blackwater, Lacknastooka (R153008), 2 September 1981 (Hayes, 1991)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). L. Leane, Killarney, Muckross Boathouse (V965866), 1 September 1987, NOM (Murray, 2005). **KILDARE: HA 7 -** R. Boyne, Edenderry (N636346), 9 July 1981 (Hayes, 1991)**: HA 9 -** R. Liffey, Sallins (N881245), 17 July 1983 (Hayes, 1991). **KILKENNY: HA 15 -** R. Nore: Threecastles (S458626), 27 August 1981; Ballyragget (S445707), Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (all Hayes, 1991). **LAOIS: HA 15 -** R. Nore: Castletown Bridge (S326930), Kilbricken (S362898), Shanahoe Bridge (S407858) and u/s Durrow (S416787), 27 August 1981 also Athanagh (S423763), 28 August 1981 (Hayes, 1991). **LIMERICK: HA 25 -** R. Mulkear, d/s Cappamore (R779504) and Dromkeen Bridge (R741480), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972)**: HA 33 -** R. Owenmore, Bangor Erris (F863228), 18 August 1983 (Hayes, 1991). Bog pools, Glenamoy (F896345), April 1973, CD (Dowling, 1975; Dowling and Murray, 1981)**: HA 34 -** R. Moy, Cloongullaun (G348016), 30 August 1982 and Bellanacurra (G403047), 29 August 1982 (Hayes, 1991). **MEATH: HA 6 -** R. Dee, Drumconrath (N910894), 27 July 1983 (Hayes, 1991)**: HA 7 -** R. Boyne: Bellinter Bridge (N894626), 21 August 1988 (Murray, 1988); Ardsallagh, at St Bridget's Well (N897635), 9 May 1982 (DAM); New Bridge, Navan (N873679), 18 August 1988 (Murray, 1988). R. Blackwater: Bloomsbury Bridge, Oristown (N793741) and Donaghpatrick (N819723), 19 August 1988 (Murray, 1988). **OFFALY: HA 25 -** R. Little Brosna, Brosna Bridge (S077938), Sharavogue (S056953) and New Bridge (N016088), 2 September 1982 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck: Ballyforan (M817464) and Castlecoote (M809627), 16 July 1981; Athleague (M825758) and Mount Talbot

(M813531), 14 August 1981; Newtown (M844346), 15 August 1981 (all Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168) and Metal Bridge, Tobercurry (G464138), 30 August 1982 (Hayes, 1991). **TIPPERARY: HA 25 -** R. Kilmastulla, Kilmastulla Bridge (R728698), 3 September 1981 (Hayes, 1991). **WATERFORD: HA 18 -** R. Blackwater, Ballyduff (W964992), 31 August 1981 (Hayes, 1991). **WICKLOW: HA 10 -** R. Avonmore, Castlehoward (T190833), 4 August 1983 (Hayes, 1991). R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991). R. Glencullen, Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989).

***Cricotopus* (*Cricotopus*) *trifascia* Edwards, 1929**

ANTRIM: HA 3 - R. Clogh (Clogh R.), Clough Mills (D105109), 2 July 2000 (Langton, 2002)**: HA 3 -** L. Neagh, Churchtown Point (J056852), 13 October 2000 (Langton, 2002), 22 August 2001, 22 and 31 May 2011 (PHL). R. Main, Randalstown (J084904), 13 October 2000 (Langton, 2002). R. Kells (Kells R.), Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002). Glen Burn, Lower Glen Bridge (J263994), 4 May 1999 (PHL)**: HA 4 -** R. Bush, Conogher Bridge (C963305), 10 September 2000; Stranocum (D009307) and Ballyhoe Bridge (D077294), 2 July 2000 (all Langton, 2002). **CARLOW: HA 12 -** R. Slaney, Motabower Bridge (S832778) and Kilcarry Bridge (S893624), 28 July 1981 (Hayes, 1991). **CLARE: HA 27 -** L. Dromore, Ruan, Corrofin (R352864), 16 June 2009, EPA (DAM)**: HA 28 -** R. Doonbeg, Derryard (Q979644), 30 July 1982 (Hayes, 1991). R. Caher, 5km from source, Murroogh (M153089), 27 October 1999, CB (Kelly-Quinn *et al.*, 2003). **CORK: HA 18 -** R. Blackwater, Ballymacquirk Bridge, Banteer (W382989), 1 September 1981 (Hayes, 1991)**: HA 20 -** R. Bandon: Long Bridge, Dunmanway (W242631), 30 June, 25 August and 25 September 1980; Bealabouy Bridge, Dunmanway (W257514), 25 September 1980; u/s Ballineen (W331537), 30 June 1980; Ballineen Bridge(W434538), 30 June 1980; R. Bandon, Castle Bernard (u/s Bandon) (W472546), 18 April to 31 October 1980; 2.5km d/s Bandon (W516569), 20 March to 28 November 1980 (all Morgan, 1982). **DERRY: HA 2 -** pool, Roe Valley Park, Limavady (C679201), 8 September 2006 (PHL). R. Roe, Largy Bridge, Limavaddy (C681202), 14 July 2000 and R. Castle (Castle R.), Ardmore Bridge, Limavady (C706207), 9 June 2000 (Langton, 2002)**: HA 3 -** R. Aghadowey, Ballybritain Bridge (C859212) and R. Macosquin, Black Bridge, Ballylintagh (C854256), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 12 April to 1 November 1999, 3 May to 8 October 2000, 26 April, 16 and 30 June 2001, 22 September 2002 (PHL). L. Neagh, Ballyronan (H948862), 13 October 2000 (Langton, 2002), 27 April 1999, 4 July 2000, 22 and 31 May 2011 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 7 May, 4 July and 13 October 2000 (Langton, 2002). **DONEGAL: HA 38 -** R. Tullaghobeg, Millmount (B933304), 12 August 1982 (Hayes, 1991)**: HA 39 -** R. Leannan,

Drumaboden (C165218), 12 August 1982 (Hayes, 1991). R. Crana, Buncrana (C347328) and Ballymagan (C379344), 15 August 1982 (Hayes, 1991). **DUBLIN: HA 9 -** R. Dodder: Fort Bridge, Bohernabreena (O009242), 8 July 1947, CFH (CFH) and 31 May 1967 (Murray, 1972); Landsdown Road Bridge (O180327), 18 July 1967 (Murray, 1972). **FERMANAGH: HA 35 -** Glen R., Garrison (G943522), 29 June 2000 (Langton, 2002). **GALWAY: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 and R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991). **KERRY: HA 18 -** R. Blackwater, Lacknastooka (R153008), 2 September 1981 (Hayes, 1991)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). L. Doo (Doolough), Muckross Penninsula (V949860), 3 July 1973 (Douglas and Murray, 1980). L. Leane, Killarney: Castlelough Bay (V966866), 14 July 1973 and Laune outflow (V900910), 1973 (Douglas and Murray, 1980). R. Flesk, d/s Clydagh/Loo confluence (W084814), May to October 1978 (Ashe, 1982); Flesk Bridge (W036876) and White Bridge (V987904), 1973 (Douglas and Murray, 1980); u/s New Bridge (V978900), 30 May 1973 (Douglas and Murray, 1980) and May to October 1978 (Ashe, 1982); d/s New Bridge (V963885), May to October 1978 (Ashe, 1982). **KILDARE: HA 9 -** R. Liffey, Straffan Bridge (N924293), 15 July 1983 and R. Rye, Kildare Bridge, Carton (N948387), 13 July 1983 (Hayes, 1991). **KILKENNY: HA 15 -** R. Nore: Threecastles (S458626), 27 August 1981; Ballyragget (S445707), Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (all Hayes, 1991). **LAOIS: HA 15 -** R. Nore: Castletown Bridge (S326930) and Kilbricken (S362898), 27 August 1981 also Athanagh (S423763), 28 August 1981 (all Hayes, 1991). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514), d/s Cappamore (R779504) and Dromkeen Bridge (R741480), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Burleemslough, Clapper Bridge Ford, Killeen, Cloonlaur (L754759), 5 August 2004, DAM/WM (DAM)**: HA 33 -** R. Owenmore, Bangor Erris (F863228), 18 August 1983 and R. Glenlassra, Belderg (G023407), 19 August 1983 (Hayes, 1991)**: HA 34 -** R. Moy: Bellanacurra (G403047) and Ballylahan (M227992), 29 August 1982 and Cloongullaun (G348016), 30 August 1982 (Hayes, 1991). **MEATH: HA 6 -** R. Dee, Drumconrath (N910894), 27 July 1983 (Hayes, 1991)**: HA 7 -** R. Boyne: Scarrif Bridge (N733527), 9 July, 1981 (Hayes, 1991) and June 1989 (Murray and Lynch, 1991); Newtown, Trim (N815571), 9 July 1981 (Hayes, 1991); Bellinter Bridge (N894626), 21 August 1988; Ardsallagh, at St Bridget's Well (N897635), 7 July 1988; Kilcarn Bridge, Navan (N884657), 21 August 1988 and New Bridge, Navan (N873679), 18 August 1988 and Stackallen Bridge (N917713), 17 August 1988 (all Murray, 1988) and 19 July 1989 (DAM); Slane Bridge (N965737), Knowth Weir (N995720), Oldbridge (O045761) and d/s Oldbridge (O062753), 19 July 1989 (DAM). R. Blackwater: Bloomsbury Bridge, Oristown (N793741) and Donaghpatrick (N819723), 19 August 1988 (Murray, 1988). R. Kinnegad, Kinnegad (N601448), Clonard Bridge, d/s Clonard (N658449), June 1989, JL/DAM (Murray and Lynch, 1991). **OFFALY:**

HA 25 - R. Shannon, Shannon Bridge (M967254), 15 August 1981 (Hayes, 1991). R. Little Brosna, Brosna Bridge (S077938) and New Bridge (N016088) and R. Brosna, Cloghan (M046209), 2 September 1982 (Hayes, 1991)**: HA 7 -** Yellow R., tributary to R. Boyne, Garr Bridge (N532370) and Sheep Bridge (N582387), June 1989 (Murray and Lynch, 1991). **ROSCOMMON: HA 26 -** R. Suck: Ballyforan (M817464) and Castlecoote (M809627), 16 July 1981; Athleague (M825758) and Mount Talbot (M813531), 14 August 1981 (all Hayes, 1991). R. Lung, Lung Old Bridge, Tibohine (M652928), 15 June 1999 (Murray, 2005). **SLIGO: HA 34 -** R. Moy, Metal Bridge, Tobercurry (G464138), 30 August 1982 (Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430) and R. Easky, Easky (G377378), 19 August 1983 (Hayes, 1991). **TIPPERARY: HA 15 -** R. Nore, Quaker Bridge (S211868), 27 August 1981 (Hayes, 1991)**: HA 16 -** Black R., Twomileboris (S192578) and R. Breagagh, Archerstown Bridge (S140568), 22 May 1992; R. Clover, Twomileborris (S199590), 6 July 1992; R. Drish, Boolabeha Bridge (S190619) and Athlummon Bridge (S177593), 22 May 1992 also Castletown (S207634), 6 July 1992; R. Suir: d/s Thurles (S128581), 22 May 1992, Loughmore (S120670), Rossestown Bridge (S134624) and Cabragh (S124562), 6 July 1992 (all Murray and Lynch, 1992). **WATERFORD: HA 18 -** R. Blackwater, Ballyduff (W964992) and Lismore (X047988), 31 August 1981 (Hayes, 1991). **WEXFORD: HA 12 -** R. Slaney, Clomahon (S933534) and Ballycarney (S967488), 29 July 1981 (Hayes, 1991). **WICKLOW: HA 10 -** R. Avonbeg, Glenmalure, Drumgoft Bridge (T105905), 4 August 1983 (Hayes, 1991). R. Glencullen, Knocksink (O217182) and Enniskerry Bridge (O227173), 1970, KC (Clabby and Bracken, 1976)**: HA 12 -** R. Slaney, Stratford Bridge (S895930) and Kilmurray (S889856), 28 July 1981 (Hayes, 1991).

***Cricotopus* (*Cricotopus*) *tristis* Hirvenoja, 1973**

CAVAN: HA 36 - R. Erne, Dingin's Bridge (N331948), 27 August 1982 (Hayes, 1991)**: HA 36 -** R. Erne, Kilsarin (N362910), 27 May 1982 (Hayes, 1991). **CORK: HA 20 -** R. Bandon: Ballineen Bridge (W434538), 25 September 1980; Castle Bernard (u/s Bandon) (W472546), 31 October 1980; 2.5km d/s Bandon (W516569), 30 June to 28 November 1980 (all Morgan, 1982). **GALWAY: HA 26 -** R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991). **KERRY: HA 22 -** R. Flesk, d/s Whitebridge (V987900), July 1976 (Ashe, 1982). **MAYO: HA 32 -** L. Doo, Delphi, north east shore (L834689), 6 June 2002 (Murray, 2005) and 22 August 2002, DAM/WM (DAM)**: HA 34 -** R. Moy, Bellanacurra (G403047), 29 August 1982 and Cloongullaun (G348016), 30 August 1982 (Hayes, 1991). L. Conn, Crossmolina (G165144), 15 April 2008, EPA (DAM). **MEATH: HA 7 -** R. Boyne, Scarrif Bridge (N733527), 9 July 1981 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Metal Bridge, Tobercurry (G464138) and Annagh (G466123), 30 August 1982 (Hayes, 1991). **WEXFORD: HA 11 -** R. Ounvarra, Ballycarnew

(T153519), 6 May 2006, DAM/WM (DAM). **WICKLOW: HA 10 -** R. Avonbeg, Meetings Bridge (T188831), 11 July 1997 (Curran, 2001). R. Avonmore, Lion Arch Bridge (T194833), 11 July 1997 (Curran, 2001).

***Cricotopus* (*Cricotopus*) Pe 16 sensu Langton and Visser, 2003**
KERRY: HA 22 - R. Caragh, d/s Owenroe R. confluence (V720815), 25 October 1999, CB (PJA/NMI, Kelly-Quinn *et al*, 2003).

***Cricotopus* (*Isocladius*) *brevipalpis* Kieffer, 1909**
CLARE: HA 28 - R. Caher, Holywell, 2.5km from source (M173069), 29 April 2000 and Murroogh, 5km from source (M153089), 29 April 2000, CB (PJA/NMI). **CORK: HA 21 -** L. Bofinna, Bantry (W041488), 18 June 2008, EPA (DAM). **DONEGAL: HA 37 -** Carn L., Blue Stack Mountains (G871886), 27 July 2005, JRB (Murray, 2005; Murray and Baars, 2006). **GALWAY: HA 30 -** L. Maumwee, Maam Cross (L977485), 12 July 2007, EPA (DAM). **KERRY: HA 21 -** L. Brin, Derreeny (V780775), 10 September 2008, EPA (DAM). Eagles L., Knocknagantee (V674728), JRB (Murray and Baars, 2006). **MAYO: HA 32 -** L. Moher, Liscarney, Westport (L977766), 18 September 2008, EPA (DAM). **TIPPERARY: HA 18 -** Black L., Arra Mountains (R738771), 10 August 2005, JRB (Murray and Baars, 2006).

***Cricotopus* (*Isocladius*) *intersectus* (Staeger, 1839)**
ANTRIM: HA 3 - L. Neagh, Antrim Bay (J135866) and Churchtown Point (J056852), 22 August 2001 (PHL)**: HA 3 -** pond (pit), Templepatrick (J232856), 26 July 2008 (PHL)**: HA 5 -** L. Mourne, Carrickfergus (J415924), 4 May 1999 (PHL)**: Rathlin Island -** L. Nanskan (D108524), 24 July 2000 (Langton, 2002) and Ushet L. (D154485), 5 July 2004 (PHL). **ARMAGH: HA 3 -** L. Neagh, Oxford Island, Lurgan (J044621), 18 July 2003 (PHL). **CAVAN: HA 36 -** Glasshouse L., Killashandra (H270060), 7 June 2007, EPA (DAM). **CLARE: HA 25 -** L. Graney, (R568907), 24 May 2003 (PHL) and Flagmount, east shore (R563932), 16 September 2009, EPA (DAM). L. Atorick, Woodford (R637964), 24 May 2003 (PHL)**: HA 27 -** L. Cullaun, Corrofin, mid east shore (R317905), 7 June 2006, EPA (EPA). L. Inchiquin, Corrofin (R270895), 6 June and 4 July 2006, EPA (DAM)**: HA 28 -** L. Lickeen, Kilfenora (R175909), 6 June 2006, EPA (DAM). **DERRY: HA 1 -** inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 26 April 2001 (PHL)**: HA 3 -** R. Bann, Coleraine (C854304), 30 September 2000 (PHL). L. Neagh, Ballyronan (H948862), 7 May 2001 and 15 May 2002 (PHL). **DONEGAL: HA 38 -** L. Anure, Loughanure (B817166), 19 July 2000 (PHL) and east shore (B818162), 7 September 2009, EPA (DAM). L. Scalpachore, Cruit Island, Burtonport (B730216), 19 July 2000 (PHL). L. Veagh, Derrylahane, GNP, Castle shore

(C038230), 16 August 1985, POD (Heneghan, 1981; Murray,1996, 2005)**: HA 40 -** L. Fad, Coolmany (C398428), 10 September 2009, EPA (DAM). **DOWN: HA 5 -** L. Henney, Ballynahinch (J348586) and Bow L., Ballynahinch (J354577), 22 June 2000 (Langton, 2002). **FERMANAGH: HA 36 -** L. Erne, Lower, Brocagh Point, Boa Island (H108626), 27 April 2002 and 17 August 2011 (PHL). L. Inver (Inver L.), Rosslea (H518314), 28 June 2000 (PHL). L. Kilturk, south shore, Newtownbutler (H374255), 27 June 2000 (PHL). R. Bannagh, Drummoney Falls, Pettigo (H168676), 17 August 2011 (PHL). **GALWAY: HA 25 -** L. Derg, Woodford (M794964), 24 May 2003 (PHL)**: HA 29 -** L. Rea, Loughrea (M615154), 14 June 2007, EPA (DAM)**: HA 30 -** L. Ballyquirke, Moycullen (M232317), 8 August 2007, EPA (DAM)**: HA 31 -** L. Ballynakill, Gorumna (L867236), 19 April 2006, EPA (DAM). **KERRY: HA 22 -** R. Caragh, Bealalaw Bridge (V715832), 1975, CD (Dowling *et al*., 1981). **LEITRIM: HA 26 -** L. Allen, Drumshanbo Lock (G968110), 30 March 2000 (DAM). L. Acres, Drumshanbo (G968099), 24 July 2008, EPA (DAM). **LOUTH: HA 6 -** L. Mentrim, Ardee (N913879), 27 June 2005 DAM/WM (DAM). **MAYO: HA 34 -** L. Mallard, Castlebar (M121902), 30 September 2004, DAM/WM (DAM). **MONAGHAN: HA 36 -** L. Inner, Dartery, Drum (H625173), 6 June 2007, EPA (DAM). **SLIGO: HA 35 -** L. Arrow, Ballinafad (G789123), 9 September 2008, EPA (DAM). **TYRONE: HA 3 -** L. Neagh, Washing Bay, Coalisland (H903662), 30 May 2002 (PHL). **WESTMEATH: HA 26 -** L. Derravaragh, Crookedwood (N468634), 30 August 2007, EPA (DAM).

***Cricotopus* (*Isocladius*) *laricomalis* Edwards, 1932**

CLARE: HA 27 - L. Bunny, Aughrim (R377965), 24 May 2003 (PHL) also 7 June and 1 August 2006, EPA (EPA). L. Cullaun, Corrofin, mid east shore (R317905), 7 June, 4 July and 5 September 2006, EPA (EPA). **GALWAY: HA 29 -** L. Rea, Loughrea (M624153), 25 May 2003 (PHL)**: HA 30 -** L. Corrib, no data (M1545), 1980, BC (DAM). Stream at N-59 lay-by, Moycullen (M204326), 25 May 2003 (PHL)**: HA 31 -** L. Anaserd, Ballyconneely (L605443), 20 April 2006, EPA (DAM). L. Ardderry, Maam Cross (L998458), 24 May 2003 (PHL). **MAYO: HA 32 -** R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972)**: HA 33 -** Sraheens Bridge, Achill Island (L718983), 6 May 2004, DAM/WM (DAM)**: HA 34 -** Castlebar L., north shore, Castlebar (M106879), 7 May 2004, DAM/WM (DAM). **TIPPERARY: HA 25 -** R. Kilmastulla, Kilmastulla Bridge, Birdhill (R728698), 3 September 1982, BPH (Hayes, 1991; Murray, 2005). **WESTMEATH: HA 26 -** L. Owel, Mullingar (N421566), 1981 (Forde, 1985).

***Cricotopus* (*Isocladius*) *obnixus* (Walker, 1856)**

CLARE: HA 27 - L. Cullaun, Corrofin, mid east shore (R317905), 7 June and 5 September

2006, EPA (EPA). L. Muckanagh, Tubber, Corrofin (R368926), 7 June and 2 August 2006, EPA (EPA). **DONEGAL: HA 38** - R. Owenveagh upper (Ballaghgeeha), Glenveagh (B970160), 22 and 29 July 1985 (Heneghan, 1986). **GALWAY: HA 25** - L. Derg, Woodford (M794964), 24 May 2003 (PHL)**: HA 29** - L. Rea, east shore, Loughrea (M624153), 25 May 2003 (PHL)**: HA 30** - L. Ross, Moycullen (M200363), 25 May 2003 (PHL). **MAYO: HA 34** - L. Cullin, Drummon Wood (G235046), 18 June 2008, EPA (DAM).

***Cricotopus* (*Isocladius*) *ornatus* (Meigen, 1818)**

CLARE: HA 27 - L. Inchiquin, Corrofin (R270895), 6 June 2006, EPA (DAM). **DUBLIN: HA 9** - R. Dodder, Firhouse (O104274), 14 July 1968 (Murray, 1972 - sub *C. sylvestris* var *fuscimanus* Meigen). **MAYO: Clare Island** - L. Leinapollbauty, Lecarrow (L691856), 5 June 2002 (Murray and Murray, 2003).

***Cricotopus* (*Isocladius*) *pilitarsis* (Zetterstedt, 1850)**

DONEGAL: HA 37 - R. Eany, d/s Eanybeg confluence (G842815), 10 August 1982 (Hayes, 1991; Murray, 1996)**: HA 38** - L. Veagh, GNP: south shore, Glenveagh (C003188), 25 May 1986, LJH (Murray, 2005) and Derrylahane, Glenveagh (C038233), 24 July 1985 (Heneghan, 1986; Murray, 1996). **GALWAY: HA 26** - R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991; Murray, 1996)**: HA 30** - L. Corrib, no data (M1545), 1980, BC (DAM). **MEATH: HA 6** - R. Dee, Drumconrath (N910894), 27 July 1983 (Hayes, 1991; Murray, 1996). **OFFALY: HA 25** - R. Little Brosna, Milltown Park (S068907), Brosna Bridge (S077938), Sharavogue (S056953) and New Bridge (N016088), 2 September 1982 (Hayes, 1991; Murray, 1996); R. Little Brosna, Ryan's Cross (S053882), 3 September 1982, BPH (Murray, 2005). **WICKLOW: HA 12** - R. Slaney, Stratford Bridge (S895930), 28 July 1981 (Hayes, 1991; Murray, 1996).

***Cricotopus* (*Isocladius*) *reversus* Hirvenoja, 1973**

ANTRIM: HA 3 - Leslie Hill pool, Ballymoney (C935263), 26 September 1999 (PHL)**: HA 5** - L. Mourne, Carrickfergus (J415924), 4 and 8 May 1999 (PHL). **CLARE: HA 25** - L. Atorick, Woodford (R637964), 24 May 2003 (PHL)**: HA 27** - L. Bridget, north basin, Derrymore, Badyke (R563803), 12 June 2009, EPA (DAM). **DERRY: HA 3** - R. Bann, Coleraine (C854304), 22 September 1999 and 3 May 2000 (PHL). L. Neagh, Ballyronan (H948862), 27 April and 4 May 1999 (PHL). **DONEGAL: HA 38** - L. Dunglow, east shore, Dunglow (B787117), 19 July 2000 (Langton, 2002). **FERMANAGH: HA 36** - L. Erne, Upper, Crom Castle, Newtownbutler (H357244), 27 June 2000 (Langton, 2002). **GALWAY: HA 25** - L. Derg, Woodford (M794964), 24 May 2003 (PHL). **KERRY: HA 21** - Erik L., Derrygarriff

(V881777), 9 August 2005, JRB (Murray, 2005). **MONAGHAN: HA 36 -** L. Drumlona, Rockcorry (H636176), 11 July 2007, EPA (DAM).

***Cricotopus* (*Isocladius*) *speciosus* Goetghebuer, 1921**
LIMERICK: HA 24 - Bleach L., Pallaskenry (R441569), 28 July 2009, EPA (Murray, 2012a).

***Cricotopus* (*Isocladius*) *sylvestris* (Fabricius, 1794)**
ANTRIM: HA 3 - L. Neagh, Antrim Bay (J135866) and Churchtown Point (J056852), 10 May 2000 (Langton, 2002)**: HA 4 -** park pond, Carnfunnock (D379069), 20 June 2000 (Langton, 2002)**: HA 5 -** L. Mourne, Carrickfergus (J415924), 4 and 8 May 1999 (PHL)**: Rathlin Island -** rock pool, Ushet Point (D153476), 5 July 2004 (PHL). **CARLOW: HA 12 -** R. Slaney, Motabower Bridge (S832778), 28 July 1981 (Hayes, 1991). **CAVAN: HA 36 -** R. Erne: Kilsarin (N362910), 27 May 1982, Carrigan (N391935), 27 August 1982 and Drumbarry (N462951), 17 August 1982 (all Hayes, 1991). Glasshouse L., Killashandra (H270060), 12 April 2007, EPA (DAM). L. Derrybrick, Milltown, Belturbet (H346117), 11 July, 3 and 18 September 2007, EPA (DAM). L. Macnean, lower, Blacklion (H106378), 17 April and 18 September 2007, EPA (DAM). Mill Lake, Killashandra (H315060), 4 April, 6 July and 3 September 2007, EPA (DAM)**: HA 7 -** L. Mullagh, Mullagh (N680856), 25 April 1968, DAM (Murray, 1972). L. Ramor, Virginia (N612860), 19 September 2007, EPA (DAM). **CLARE: HA 25 -** L. Graney, Doorus, west shore (R556930), 3 August 2006, EPA (DAM)**: HA 27 -** L. Cullaun, Corrofin, mid east shore (R317905), 3 May and 1 August 2006, EPA (EPA). **CORK: HA 18 -** R. Blackwater, Roskeen Bridge, Banteer (W444988), 1 September 1981 (Hayes, 1991)**: HA 19 -** L. Aderry, Castlemartyr (W935730), 13 August 1969, NH (Bracken and Murray, 1973)**: HA 20 -** R. Ilen, Madore (W103419) and Hollybrook (W117363), 24 August 1983 (Hayes, 1991)**: HA 21 -** L. Reenydonegan, Bantry (W000515), 2 June 1969, NH (Bracken and Murray, 1973). **DERRY: HA 1 -** pool near Creggan Reservoir, Derry (C414171), 17 May 2002 (PHL). Lower Creggan Reservoir, Derry (C422174), 26 April and 10 May 2001 (PHL)**: HA 2 -** pool, Roe Valley Park, Limavady (C679201), 9 June 2000 (Langton, 2002)**: HA 3 -** Howell's Tarn, Ballywildrick, Coleraine (C766325), 22 April 2001 also 7 and 21 April, 7 July 2002 (PHL). Downhill Lake, Downhill Forest, Coleraine (C757354), 28 July 1999, 21 August 2001 and 24 March 2002 (PHL); Downhill Forest stream, Coleraine (C759348), 21 August 2001 (PHL). Ballinrees Reservoir, Coleraine (C794300), 9 June 2000 (Langton, 2002). R. Agivey, Garvagh (C838154), 30 May 2002 (PHL). R. Bann: Newferry, d/s L. Beg (H990983), 13 October 2000 (Langton, 2002); R. Bann, Coleraine (C854304), 4 and 24 July, 22 September, 1 and 13 October 1999, 13 June, 16 July and 8 October 2000 (PHL). Pond (3), Magherafelt Golf Course (H955874), 10 May 2000 (Langton, 2002). L. Neagh, Ballyronan (H948862), 10 May

and 4 July 2000 (Langton, 2002). **DONEGAL: HA 37 -** L. Shinvagh, Carricode (H005675), 27 April 2002 (PHL)**: HA 38 -** L. Fallaneas, Kindrum (C173424), 27 July 2009, EPA (DAM). L. Mulladerg, The Rosses (B775199), 19 July 2000 (PHL)**: HA 39 -** R. Leannan, Drumaboden (C165218), 12 August 1982 (Hayes, 1991)**: HA 40 -** L. Naminn, Cloonmany (C400423), 18 August 2011 (PHL). **DOWN: HA 3 -** R. Leitrim, Leitrim Bridge, Hilltown (J217285), 13 August 1998 (PHL)**: HA 5 -** Hillsborough Park Lake, Hillsborough (J246583), 22 May 2000. L. Henney, Ballynahinch (J348586), 22 June 2000 and Bow L., Ballynahinch (J354577), 22 June 2000 (all Langton, 2002). **DUBLIN: HA 9 -** R. Dodder, Bohernabreena aqueduct 2 (O104205), 29 April 1947, CFH (DAM). **FERMANAGH: HA 35 -** L. Melvin, Garrison (G938518), 29 June 2000 (Langton, 2002)**: HA 36 -** L. Erne Upper, slipway (H362242) and Crom Castle, Newtownbutler (H357244), 27 June 2000 (Langton, 2002). L. Erne Lower, Boa Island (H108626), 29 June 2000 (Langton, 2002) and 17 August 2011 (PHL); Black Bay (H072639), 27 April 2002 (PHL). L. Killyfole (Mill L.), Rosslea (H464314), 28 June 2000 (Langton, 2002). L. Macnean, lower, Belcoo (H085384), 29 June 2000 (Langton, 2002). **GALWAY: HA 25 -** L. Derg, Woodford (M794964), 24 May 2003 (PHL)**: HA 29 -** Ballyturin L., Ballardiggan, Gort (M496005), 24 May 2003 (PHL)**: HA 30 -** L. Maumwee, Maam Cross (L977485), 8 June 2007, EPA (DAM). L. Ballyquirke, Moycullen (M232317), 13 April 2007, EPA (DAM)**: HA 31 -** L. Anaserd, Ballyconneely (L605443), 6 June 2007, EPA (DAM). **KERRY: HA 22 -** Muckross Lake, Killarney, Dundag Bay (V964858), 13 August 1973 (Douglas and Murray, 1980). **KILKENNY: HA 15 -** R. Nore: Ballyragget (S445707) and Norelands Bridge (S547436), 28 August 1981 (Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Castletown Bridge (S326930), 27 August 1981 (Hayes, 1991). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514), 8 September 1981 (Hayes, 1991). **LONGFORD: HA 26 -** R. Camlin, Aghagar Bridge (N181795), April 1965 (Murray, 1965). L. Forbes, Cloonard, Newtownforbes (N084821), 25 June 2008, EPA (DAM). **MAYO: HA 32 -** L. Roonagh, Roonagh (L749759), 30 September 2004, DAM/WM (DAM). Westport L., Westport Woods Hotel, Westport (L985843), 30 September 2004, DAM/WM (DAM). Belclare, Westport (L9682), July 1911, PHG. Lough near Westport (L9984), July 1911, PHG and Demesne, Westport (L9984), July 1911, PHG (all Grimshaw, 1912)**: Clare Island -** Creggan L., Lecarrow (L689857), 4 August and 1 September 1998, 7 July and 14 September 1999 (Fahy, 2002). L. Poirtin Fuinch (L706857), 10 August 1998 (Fahy, 2002). **MEATH: HA 7 -** R. Boyne, Knowth Weir (N995720) and d/s Oldbridge (O062753), 19 July 1989 (DAM). **MONAGHAN: HA 36 -** L. Annaghmakerrig, Newbliss (H585205), 22 May and 27 June 2006, EPA (DAM). L. Drumlona, Rockcorry (H636176), 5 June 2007, EPA (DAM). L. Inner, Dartery, Drum (H625173), 5 April and 9 September 2007, EPA (DAM). L. Summerhill, Clones (H490279), 26 April and 26 July 2007, EPA (DAM)**: HA 6 -** L. Naglack, Carrickmacross (H853026), 11 June, 12 July and 14 September 2007, EPA

(DAM). L. Monalty, Carrickmacross (H866027), 11 June, 20 July and 14 September 2007, EPA (DAM). **OFFALY: HA 25 -** R. Little Brosna, Sharavogue (S056953) and New Bridge (N016088), 2 September 1982 (Hayes, 1991). Bog lake, Turraun (N172185), 22 December 1997, WT (DAM) and 3 June 1999 (Murray, 2005). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627), 16 July 1981 (Hayes, 1991). L. Ree, Yew Point, Barley Harbour (N018485), 11 September 2007, EPA (DAM). L. Meelagh, Keadew (G901117), 15 April 2008, EPA (DAM). **TIPPERARY: HA 16 -** R. Suir, d/s Thurles (S128581), 22 May 1992 (Murray and Lynch, 1992). **WATERFORD: HA 18 -** R. Blackwater, Ballyduff (W964992) and Lismore (X047988), 31 August 1981 (Hayes, 1991). **WESTMEATH: HA 26 -** L. Owel, Mullingar (N421566), June 1973, NH (Hayes, 1980). **WEXFORD: HA 12 -** R. Slaney, Edernline Bridge (S977345), 29 July 1981 (Hayes, 1991; Murray, 2005). **WICKLOW: HA 12 -** R. Slaney, Stratford Bridge (S895930), 28 July 1981 (Hayes, 1991).

***Cricotopus* (*Isocladius*) *tricinctus* (Meigen, 1818)**

ANTRIM: Rathlin Island - lough on Nature Reserve (D095505), 24 July 2000 (Langton, 2002). **CORK: HA 19 -** L. Gouganebarra, Inchegeelagh (W009060), 27 July 1968 (Murray, 1972). L. Aderry, Castlemartyr (W935730), 4 June 1969, NH (Bracken and Murray, 1973)**: HA 21 -** L. Reenydonegan, Bantry (W000515), 2 June 1969, NH (Bracken and Murray, 1973). **GALWAY: HA 32 -** L. Aughrusbeg, Cleggan (L557582), 5 June 2007, EPA (DAM). **MAYO: HA 32 -** lough near Westport (L9984) and Clogher L., Westport (M0388), July 1911, PHG (all Grimshaw, 1912). **MEATH: HA 7 -** R. Boyne, Stackallen Bridge (N917713) and Oldbridge (O045761), 19 July 1989 (DAM). **TIPPERARY: HA 16 -** R. Suir, Loughmore (S120670), 6 July 1992 (Murray and Lynch, 1992). **WATERFORD: HA 17 -** L. Carrigavantry, Tramore (S548022), 19 August 2009, EPA (DAM). **WESTMEATH: HA 25 -** L. Ennell, Tudenham (N415466), 4 September 1968 (Murray, 1972).

***Cricotopus* (*Isocladius*) *trifasciatus* (Meigen, 1810)**

ANTRIM: HA 4 - R. Bush, Seneirl Bridge (C943362), 16 July 2000 and Conogher Bridge (C963305), 10 September 2000 (Langton, 2002). **CAVAN: HA 26 -** L. Sheelin, Kilnahard (N435860), 19 August 1971, NH (DAM)**: HA 36 -** L. Ardan, Milltown, Belturbet (H354124), 26 July 2007, EPA (DAM). **CLARE: HA 27 -** L. Inchiquin, Corrofin (R272894), 17 September 2009, EPA (DAM). **CORK: HA 19 -** L. Aderry, Castlemartyr (W935730), 3 September 1969, NH (Bracken and Murray, 1973)**: HA 21 -** L. Avaul, Glengarrif (V910553), 1969, NH (Bracken and Murray, 1973). L. Reenydonegan, Bantry (W000515), 2 June 1969, NH (Bracken and Murray, 1973). **DERRY: HA 1 -** Lower Creggan Reservoir, Creggan, Derry (C422174), 10 May 2001 (PHL)**: HA 3 -** L. Neagh (H9080), no date, anon. (McLarnon and Carter, 2000). R.

Bann, Coleraine (C854304), 30 October 2000 (PHL). **DONEGAL: HA 37 -** Carn L., Blue Stack Mountains (G871886), 27 July 2005, JRB (DAM)**: HA 38 -** L. Veagh, GNP, Derrylahane, Glenveagh (C038232), 24 July 1985, LJH (Heneghan, 1986; Murray, 2005). L. Mulladerg, The Rosses (B775199), 19 July 2000 (Langton, 2002). **GALWAY: HA 30 -** L. Corrib (M1545), 1980, BC (DAM). **KERRY: HA 22 -** L. Leane, Killarney: Brickeen (V937850), 3 July 1973 (Douglas and Murray, 1980); mid lake (V931886), 22 April 2008, EPA (DAM). L. Kilbrean, Killarney (W005935), 8 September 1969, NH (Bracken and Murray, 1973). **MAYO: HA 32 -** R. Owengarve, Rosgalliv Bridge, Mulranny (L886962), 4 August 2004, DAM (Murray, 2005). Mulranny (L8496), July 1911, PHG (Grimshaw, 1912)**: HA 33 -** L. Bunacurry, Achill Island (F695048), 29 September 2004, DAM/WM (DAM). L. Keel, south west shore, Achill Island (F641055), 17 September 2008, EPA (DAM). **SLIGO: HA 34 -** R. Moy, Annagh (G466123), 30 August 1982 (Hayes, 1991). **WEXFORD: HA 12 -** R. Slaney, Clomahon (S933534), 29 July 1981 (Hayes, 1991). **WICKLOW: HA 10 -** R. Avonbeg, Glenmalure, Drumgoft Bridge (T105905), 4 August 1983 (Hayes, 1991).

***Cricotopus* (*Isocladius*) Pe 2 sensu Langton, 1991 and Langton & Visser, 2003**
[Langton and Visser (2003) consider the possibility that this pupal morphotype may be associated with *C.* (*I.*) *relucens* Hirvenoja, 1973].
MAYO: HA 32 - L. Clogher, boat dock on north shore, Clogher, Westport (M032880), 30 September 2004, DAM/WM (DAM).

***Cricotopus* (*Isocladius*) Pe 5 sensu Langton, 1991 and Langton & Visser, 2003**
GALWAY: HA 32 – L. Kylemore, Letterfrack (L771582), 30 July 2007, EPA (DAM).
MAYO: HA 33 - pool/stream, Camport, Achill Island (L677982), 29 September 2004, DAM/WM (DAM).

***Cricotopus* (*Nostococladius*) *lygropis* Edwards, 1929**
CORK: HA 20 - R. Bandon, Long Bridge, Dunmanway (W242631), 27 May, 30 June and 25 August 1980 (Morgan, 1982). **KERRY: HA 22 -** R. Clydagh, u/s Clydagh Bridge (W114826), June to August 1978 (Ashe, 1982). R. Flesk: d/s Clydagh/Loo confluence (W084814), June to August 1978 (Ashe, 1982); White Bridge (V987904), 29 May 1973 (DAM); d/s Whitebridge (V987900), 29 May 1973 (Murray, 2005) and June to August 1978 (Ashe, 1982; Ashe and Murray, 1980); d/s New Bridge (V963885), June to August, 1978 (Ashe, 1982).

***Cricotopus ?Isocladius* Pe (sensu Langton, 1991 - p. 208) and Langton & Visser 2003 p. 918**
DONEGAL: HA 38 - L. Kindrum, Kindrum, Fanad (C186430), 9 September 2009, EPA (DAM).

***Diplocladius cultriger* Kieffer, 1908**
DERRY: HA 3 - R. Bann, Coleraine (C854304), 17 January 2000 and 6 February 2001 (PHL). **KILDARE: HA 9 -** pond, Lyons Estate, Celbridge (N972285), 29 March 1982, PJA (PJA/NMI; Murray, 2005). **MEATH: HA 8 -** stream, Meadesbrook, Kilmoon (O038594), 25 December 1996 (Murray, 2005).

***Epoicocladius ephemerae* (Kieffer, 1924)**
CAVAN: HA 36 - L. Macnean, lower, Blacklion (H106378), 23 July 2007, EPA (DAM). **KERRY: HA 22 -** Muckross Lake, Dundag Bay (V964858), 1973 (Douglas and Murray, 1980). R. Flesk, d/s Whitebridge (V987900), July 1978 (Ashe, 1982). **LAOIS: HA 15 -** R. Nore, Athanagh (S423763), 28 August 1981 (Hayes, 1991). **LEITRIM: HA 26 -** L. Boderg, Derrycarne, north west shore (N013915), 14 May 2008, EPA (DAM). **MAYO: HA 34 -** L. Conn, Brackwansha (G191098), 21 January 1966, AJOS (Murray, 1972). **MEATH: HA 7 -** R. Blackwater, Poolboy Bridge, Navan (N871681), 18 August 1988 (Murray, 1988). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627), 16 July 1981; Ballyforan (M817464), 16 July 1981 (Hayes, 1991) also 28 July 1982, BPH (Murray, 2005) and 29 October 1982 (Hayes, 1991).

***Eukiefferiella ancyla* Svensson, 1986**
CARLOW: HA 12 - R. Slaney, Kildavin (S899597), 28 July 1981 (Hayes, 1991). **DERRY: HA 3 -** R. Moyola, New Bridge, Magherafelt (H955905), 7 May 2001 (PHL). **DONEGAL: HA 39 -** R. Leannan, Drumaboden (C165218), 12 August 1982 (Hayes, 1991). **FERMANAGH: HA 35 -** Glen R., Garrison (G943522), 29 June 2000 (Langton, 2002). **KERRY: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Clydagh, u/s Clydagh Bridge (W114826), April to September 1978 (Ashe, 1982 as *Eukiefferiella* sp. 2). R. Flesk: d/s Whitebridge (V987900), 27 July 1976, PJA (DAM) and April to September 1978 (Ashe, 1982 as *Eukiefferiella* sp. 2); d/s New Bridge (V963885), April to September 1978 (Ashe, 1982 as *Eukiefferiella* sp. 2). **MAYO: HA 32 -** R. Bunowen, Louisburg, u/s of bridge, Louisburg (L807807), 7 May 2004, DAM/WM (Murray, 2005). R. Owenwee, Belclare Bridge, Westport (L959822), 7 May 2004, DAM/WM (DAM). **WEXFORD: HA 12 -** R. Slaney, Clomahon (S933534) and Ballycarney (S967488), 29 July 1981 (Hayes, 1991). **WICKLOW: HA 10 -** R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991)**: HA 12 -** R. Slaney,

Kilmurray (S889856), 28 July 1981 (Hayes, 1991).

***Eukiefferiella brevicalcar* (Kieffer, 1911)**

CAVAN: HA 7 - R. Barora tributary, Relaghbeg (N679907), 21 April 1968 (Murray, 1972). **DERRY: HA 1 -** Upper Creggan Reservoir, Creggan, Derry (C417173), 23 March, 10 May 2001 and 17 May 2002 (PHL). Pool near Reservoir, Creggan, Derry (C414171), 18 May 2001 and 17 May 2002 (PHL). Inflow to Upper Creggan Reservoir, Derry (C413171), 23 March, 26 April, 10 and 18 May 2001, 17 May 2002 (PHL)**: HA 2 -** R. Ballykelly, Ballykelly (C623211), 9 June 2000 (Langton, 2002)**: HA 3 -** Downhill beach stream, Coleraine (C754326), 9 June 2000 (Langton, 2002); Downhill Forest stream, Coleraine (C759348), 17 March and 25 July 1999, 24 March 2002 (PHL). R. Macosquin, Black Bridge, Ballylintagh (C854256), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304): 18 March and 13 May 1999, 1 January to 28 February, 3 and 25 May, 13 June and 11 December 2000, 6 and 18 February 2001, 6 January and 7 April 2002 (all PHL). **DONEGAL: HA 37 -** stream inflow to L. Shinvagh, Carricode (H005673), 27 April 2002 and 28 March 2004 (PHL)**: HA 38 -** stream near Administration Centre, GNP, Glenveagh (C041227), 14 May 1986, LJH (Heneghan, 1986). Inflow stream to north east shore of L. Veagh, 250m from lake, Glenveagh (C031217), April 1989 (Hernan, 1991). **FERMANAGH: HA 36 -** L. Erne, Lower, Black Bay (H072639), 27 April 2002 (PHL). **KERRY**: **HA 21 -** L. Brin, Derreeny (V780775), 10 September 2008, EPA (DAM). R. Caragh: Upper Brida Valley (V785810), Lower Brida Valley (V740805), d/s Owenroe R. confluence (V720815) and outflow from L. Caragh (V713924), 1975, CD (all Dowling *et al.*, 1981). **MAYO: HA 32 -** R. Owenduff, bridge, south of Leenane on road N59 (L810595), 9 May 2003, DAM/WM (DAM). L. Doo, Delphi, west shore (L835681), 9 May and 25 August 2008, EPA (DAM). L. Fin, Delphi (L841657), 5 April 2006, EPA (DAM). **MEATH: HA 8 -** stream-pond area, Meadesbrook, Kilmoon (O038594), 10 November 2012 (DAM). **WICKLOW: HA 10 -** R. Glenealo, Glendalough (T090962), 16 July 1996, EMcE/DAM (McEntee, 1997).

***Eukiefferiella claripennis* (Lundbeck, 1898)**

ANTRIM: HA 3 - Kells R., Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002)**: HA 4 -** R. Bush, Ballyhoe Bridge (D077294), 2 July 2000 (Langton, 2002). R. Glenaan, Cushendall (D218288), 17 September 2011 (PHL). R. Glenarm, Glenarm (D310148), 17 September 2011 (PHL)**: HA 5 -** R. Ravernet, Baileysmill, Hillsborough (J324587), 22 June 2000 (Langton, 2002). Three-Mile-Water, Mossley (J380892), 4 May 1999 (PHL). Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **CARLOW: HA 12 -** R. Derreen, Acann Bridge (S900781), 29 July 1981 (Hayes, 1991). **CAVAN: HA 36 -** R. Erne, Drumbarry (N462951), 17 August 1982 (Hayes, 1991). **CLARE: HA 28 -** R. Annageeragh, Moyglass

Bridge, d/s L. Doo (R078725) and R. Doonbeg, Derryard (Q979644), 30 July 1982 (Hayes, 1991). **CORK: HA 18 -** R. Blackwater: Lombardstown (W463968), 1 September 1981; Duncannon (W180931) and Roskeen Bridge, Banteer (W444988), 2 September 1981 (Hayes, 1991). R. Araglin tributary, north east of Araglin (R969075), 15 April 2004, JRB (DAM)**: HA 20 -** R. Bandon, Long Bridge, Dunmanway (W242631), 20 February to 22 December 1980 and 17 January 1981; Bealabouy Bridge, Dunmanway (W257514), 20 February to 22 December 1980 and 17 January 1981; u/s Ballineen (W331537), 20 February to 28 November 1980; Ballineen Bridge (W434538), 20 February to 28 November 1980; Castle Bernard, u/s Bandon (W472546), 20 March to 22 December 1980 and 17 January 1981; 2.5km d/s Bandon (W516569), 20 March to 22 December 1980 and 17 January 1981 (all Morgan, 1982). **DERRY: HA 1 -** Upper Creggan Reservoir, Creggan, Derry (C417173), 17 May 2002 and inflow to Upper Creggan Reservoir, Derry (C413171), 23 March and 18 May 2001 also 17 May 2002 (PHL)**: HA 2 -** R. Bessbrook, Limavady (C655212) and burn at Largantea picnic area, Formoyle, Coleraine (C738287), 9 June 2000 (Langton, 2002)**: HA 3 -** Downhill beach stream, Coleraine (C754326), 9 June 2000 (Langton, 2002). Howell's Tarn stream, Ballywildrick, Coleraine (C766325), 7 July 2002 (PHL). Downhill Lake, Downhill Forest, Coleraine (C757354), 24 March 2002 (PHL); Downhill Forest stream, Coleraine (C759348), 17 March and 25 July 1999, 24 March 2003 (PHL). R. Macosquin, Black Bridge, Ballylintagh (C854256), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304): 18 March to 23 June 1999, 1 January to 11 December 2000, 6 February to 30 June 2001, 6 January to 7 April and 22 September 2002, 16 and 23 January 2005, 11 and 25 April, 2 May 2010 (all PHL). R. Moyola, New Bridge, Magherafelt (H955905), 7 May 2001 (PHL). **DONEGAL: HA 38 -** R. Ray, Muckish Gap (B993268), 12 August 1982 (Hayes, 1991)**: HA 38 -** GNP, Glenveagh: stream on Slieve Snaght, Bingorm (B940148), 4 June 1986 (Heneghan, 1986). Stream to north east shore of L. Veagh, 50m from lake (C030218), September 1989; stream to north west shore of L. Veagh (opposite Castle) (C013213), April and November 1989; stream from Misty L. near north west shore of L. Veagh (C015216), April and June 1989 and stream to south west shore of L. Veagh (C003194), April and September 1989 (all Hernan, 1991)**: HA 39 -** stream, Ranny House (Kerrykeel, "burn"), Carrokeel (C208322), 2 June 2000 (Langton, 2002). **DOWN: HA 3 -** R. Muddock, Muddock Bridge, Rathfriland (J235342), 19 September 1997 (PHL). **DUBLIN: HA 9 -** bog pool, Featherbed (O120190), 1974, CD (Dowling and Murray, 1981). R. Dodder: Maureens Brook, west of Glencree (O126176), 11 May 2004, JRB (DAM). R. Dodder: headwaters, Featherbed (O128175), 29 August 1981 (PJA/NMI); Aqueduct, Bohernabreena (O104205) 25 March 1949; Milltown u/s Donnybrook, (O177312), 1 November and 19 December 1948 also 27 May 1949 and Fort Bridge, Bhoernabreena (O009242) 23 February, 28 March and 5 April 1949, all Reilly (1951). **FERMANAGH: HA 36 -** R. Belbarrinagh, Belcoo

(H112309), 29 June 2000 (Langton, 2002). **GALWAY: HA 25 -** R. Woodford, Woodford (M732000), 24 May 2003 (PHL)**: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 and R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991)**: HA 30 -** R. Grange, Grange Bridge (M428498), 16 August 1981 and R. Loughkip, Ballyquirk, Moycullen (M224313), 17 August 1981 (Hayes, 1991)**: HA 32 -** R. Owenglin, Clifden (L677506), 18 August 1981 (Hayes, 1991). **KERRY: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Caragh: Upper Brida Valley (V785810), Lower Brida Valley (V740805), d/s Owenroe R. confluence (V720815) and Bealalaw Bridge (V715832), 1975, CD (all Dowling *et al.*, 1981). L. Caragh, Killorglin (V719904), 20 June 2008, EPA (DAM). L. Leane, Killarney (V931886), 18 September 2008, EPA (DAM). R. Clydagh, Caherbarnagh (W202842), u/s Clydagh Bridge (W114826) and Knocknagowan (W187837), April 1978 to March 1979 (Ashe, 1982). R. Flesk, d/s Clydagh/Loo confluence (W084814), Garries Bridge (W082835), Flesk Bridge (W034876), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), April 1978 to March 1979 (all Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), April 1978 to March 1979 (Ashe, 1982)**: HA 23 -** L. Cam, Castlegregory (Q597079), 25 June 2008, EPA (DAM). **KILDARE: HA 7 -** R. Boyne, Edenderry (N636346) and Ballyboggan (N639402), 9 July 1981 (Hayes, 1991)**: HA 9 -** R. Liffey, Sallins (N881245), 17 July 1983 (Hayes, 1991) and Straffan Bridge (N924293), 1929, WEF (Humphries and Frost, 1937). **KILKENNY: HA 15 -** R. Nore: Threecastles (S458626), 27 August 1981; Ballyragget (S445707), Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Castletown Bridge (S326930), Kilbricken (S362898), Shanahoe Bridge (S407858) and u/s Durrow (S416787), 27 August 1981 also Athanagh (S423763), 28 August 1981 (Hayes, 1991). **LEITRIM: HA 35 -** L. Glencar, Glencar (G757435), 2 September 2008, EPA (DAM). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514) and d/s Cappamore (R779504), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** stream at "Archeological site 9", Murrisk (L908824), 7 May 2004, DAM/WM (DAM)**.** R. Burleemslough, Clapper Bridge Ford, Killeen, Cloonlaur (L754759), 5 August 2004 and R. Bunowen, Louisburg, u/s of bridge (L807807), 30 September 2004, all DAM/WM (DAM). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972)**: HA 33 -** bog pools, Glenamoy (F896345), 1973, CD (Dowling and Murray, 1981). Bolinglanna Stream, Achill (L756926), 6 May 2004, DAM/WM (DAM)**: Clare Island -** R. Dorree, 100m above sea, Maum (L708865), 28 April 2000 (Murray and Murray, 2003). **MEATH: HA 6 -** R. Dee, Drumconrath (N910894), 27 July 1983 (Hayes, 1991)**: HA 7 -** R. Boyne: Scarrif Bridge (N733527) and Newtown, Trim (N815571), 9 July 1981 (Hayes, 1991); Stackallen Bridge (N918713), 12 July 1981 (Hayes, 1991); Bellinter Bridge (N894626), 21 August 1988; Ardsallagh, at St Bridget's Well (N897635), 7 July 1988; Kilcarn Bridge, Navan

(N884657), 21 August 1988 (all Murray, 1988). R. Blackwater, Bloomsbury Bridge, Oristown (N793741) and Donaghpatrick (N819723), 19 August 1988 (Murray, 1988)**: HA 8 -** R. Nanny, Duleek (O050683), 6 June 2006, DAM/WM (DAM). Stream, Meadesbrook, Kilmoon (O038594), 30 April 1982, DAM (PJA) and 12 August 1982, 10 November and 12 December 2012 (DAM). **OFFALY: HA 25 -** R. Little Brosna, Brosna Bridge (S077938) and Sharavogue (S056953), 2 September 1982 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck: Ballyforan (M817464) and Castlecoote (M809627), 16 July 1981; Athleague (M825758), Ballynoe (M693757) and Mount Talbot (M813531), 14 August 1981 also Newtown (M844346), 15 August 1981 (Hayes, 1991). R. Lung, Lung Old Bridge, Tibohine (M652928), 16 June 1999 (DAM). **SLIGO: HA 35 -** R. Drumcliff, Glencar (G734430) and R. Easky, Easky (G377378), 19 August 1983 (Hayes, 1991). **TIPPERARY: HA 15 -** R. Nore, Clonakenny (S116805) and Quaker Bridge (S211868), 27 August 1981 (Hayes, 1991)**: HA 16 -** R. Drish, Boolabeha Bridge (S190619) and Athlummon Bridge (S177593), 6 July 1992 (Murray and Lynch, 1992)**: HA 25 -** R. Kilmastulla, Kilmastulla Bridge (R728698), 3 September 1981 (Hayes, 1991). **TYRONE: HA 1 -** R. Glenelly, Leaghs Bridge, Mullaghsallagh (H695940), 17 August 2011 (PHL)**: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WATERFORD: HA 18 -** R. Blackwater, Ballyduff (W964992) and Lismore (X047988), 31 August 1981 (Hayes, 1991). **WESTMEATH: HA 26 -** L. Killinure, Ballaghkeernan Bay (N069445), 24 April 2007, EPA (DAM). **WEXFORD: HA 12 -** R. Boro, Dunamore Bridge, Enniscorthy (S963366), 29 July 1981 (Hayes, 1991). R. Slaney, Ballycarney (S967488) and Edernline Bridge (S977345), 29 July 1981 (Hayes, 1991). R. Sow tributary, Garylough Mill, Screen (T076302) and Movilla stream, Movilla, Screen (T082311), 6 May 2006, DAM/WM (DAM)**: HA 13 -** R. Tintern, Tintern Abbey (S792100) and at Tintern estuary bridge (S794099), 13 June 2012 (DAM). **WICKLOW: HA 10 -** R. Avonbeg, Glenmalure, Drumgoft Bridge (T105905) and R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991). R. Glencullen, Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989). Outflow from Upper Glendalough Lake, Laragh, WMNP (T109964), 16 July 1996, EMcE/DAM (McEntee, 1997). L. Bray Lower, Glencree (O140163), 2 April 2009, EPA (DAM)**: HA 12 -** R. Derry, Balisland (S978645), 28 July 1981 and Bridgeland (T021744), 29 July 1981 (Hayes, 1991). R. Slaney, Knockgarrigan, Glen of Imail (S936937), 28 July 1981 (Hayes, 1981; Murray, 2005) also Knickeen, Glen of Imail (S987948) and Stratford Bridge (S895930), 28 July 1981 (Hayes, 1991)**: HA 9 -** R. Liffey, Ballysmuttan Bridge (O157148), 1929, WEF (Humphries and Frost, 1937).

***Eukiefferiella clypeata* (Thienemann, 1919)**

ANTRIM: HA 3 - Clogh R., Clough Mills (D105109), 2 July 2000 (Langton, 2002). Glenravel Water, Gartnageeragh, Newtown Crommelin (D147154), 2 July 2000 (Langton, 2002). L.

Neagh, Antrim Bay (J135866), 28 March 2001 (PHL). R. Sixmilewater, Templepatrick (J227867), 4 May 1999 (PHL). Glen Burn, Lower Glen Bridge (J263994), 4 May 1999 (PHL)**: HA 4 -** R. Bush: Stranocum (D009307) and Ballyhoe Bridge (D077294), 2 July 2000 also Conogher Bridge (C963305), 10 September 2000 (Langton, 2002). R. Glendun, Drumfresky, Cushendun (D193308) and R. Glenariff (Inver/Glenariff), Cushendall (D215205), 2 July 2000 (Langton, 2002). R. Glenaan, Cushendall (D218288) and R. Glenarm, Glenarm (D310148), 17 September 2011 (PHL). **CARLOW: HA 12 -** R. Slaney: Kilcarry Bridge (S893624), Kildavin (S899597) and Motabower Bridge (S832778) 28 July 1981 also Rathvilly (S877823), 29 July 1981 (Hayes, 1991). **CLARE: HA 28 -** R. Creegh, Mountrivers Bridge, Doonbeg (Q991659), 30 July 1982 (Hayes, 1991). **CORK: HA 18 -** R. Blackwater: Killavullen (W648998), 31 August 1981; Lombardstown (W463968), 1 September 1981; Charles Bridge, Millstreet (W248943), Ballymacquirk Bridge, Banteer (W382989) and Roskeen Bridge, Banteer (W444988) 2 September 1981 (all Hayes, 1991)**: HA 20 -** R. Ilen, Drimoleague (W098454), 24 August 1983 (Hayes, 1991). R. Bandon, Long Bridge, Dunmanway (W242631), 25 August and 25 September 1980; Bealabouy Bridge, Dunmanway (W257514), 30 June to 31 October 1980; u/s Ballineen (W331537), 18 April to 31 October 1980; Ballineen Bridge (W434538), 18 April to 31 October 1980; Castle Bernard (u/s Bandon) (W472546), 18 April to 28 November 1980; 2.5km d/s Bandon (W516569), 20 March to 28 November 1980 and 17 January 1981 (all Morgan, 1982). **DERRY: HA 2 -** R. Owenbeg, Feeny picnic area, Feeny (C645058), 26 June 2000 (Langton, 2002). R. Roe, Deerpark Wood, Limavaddy (C682203), 9 June 2000 and Largy Bridge, Limavaddy (C681202), 14 July 2000 (Langton, 2002). Castle R., Ardmore Bridge, Limavady (C706207) and burn at Largantea picnic area, Formoyle, Coleraine (C738287), 9 June 2000 (PHL)**: HA 3 -** Downhill beach stream, Coleraine (C754326), 9 June 2000 (PHL). R. Bann, Coleraine (C854304): 12 and 26 April, 10 and 18 June, 8 August and 7 September 1999, 27 April and 16 June 2001, 2 May 2010, 27 July, 3 and 10 August 2012 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 7 May 2001 (PHL). **DONEGAL: HA 38 -** R. Tullaghobeg, Millmount (B933304), 12 August 1982 (Hayes, 1991)**: HA 39 -** R. Leannan, Kilnacrenan (C145200) and Drumaboden (C165218), 12 August 1982 and Claragh (C197210), 13 August 1982 (Hayes, 1991). R. Crana, Buncrana (C347328), 15 August 1982 (Hayes, 1991). R. Glashagh, Drumbologe, Letterkenny (C096153) and R. Swilly, Newmills, Letterkenny (C125092), 18 July 2000 (Langton, 2002). Stream, Ranny House (Kerrykeel, "burn"), Carrokeel (C208322), 2 June 2000 (Langton, 2002). **DOWN: HA 3 -** R. Rocky (d/s R. Shanky confluence), Hilltown (J233277), 26 September 1997 (PHL). **DUBLIN: HA 9 -** R. Dodder, Fort Bridge, Bohernabreena (O009242), 2 April 1946 (Fitzgerald, 1947) and 5 April 1949 (Reilly, 1951); R. Dodder, Firhouse (O104274), 1950 (Reilly, 1951). **FERMANAGH: HA 35 -** Glen R., Garrison (G943522), 29 June 2000 (Langton, 2002)**: HA 36 -** R. Bannagh, Drummoney

Falls, Pettigo (H168676), 17 August 2011 (PHL). **GALWAY: HA 30 -** L. Corrib (M1545), 1980, BC (DAM)**: HA 31 -** L. Ballynahinch, Ballynahinch (L777478), 6 June 2007, EPA (DAM)**: HA 32 -** R. Owenglin, Clifden (L677506), 18 August 1981 (Hayes, 1991). **KERRY: HA 18 -** R. Blackwater, Lacknastooka (R153008), 2 September 1981 (Hayes, 1991)**: HA 21 -** L. Brin, Derreeny (V780775), 10 September 2008, EPA (DAM)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Caragh, d/s Owenroe R. confluence (V720815), 1975, CD (Dowling *et al.*, 1981). R. Clydagh, u/s Clydagh Bridge (W114826), April to October 1978 (Ashe, 1982). R. Flesk: White Bridge (V987904), 1973, DJD/DAM (Douglas and Murray, 1980); d/s Whitebridge (V987900), 23 June 1978 (Ashe, 1982); d/s Clydagh/Loo confluence (W084814), Garries Bridge (W082835), Flesk Bridge (W034876), d/s New Bridge (V963885) and u/s L. Leane (V964894), April to October 1978 (Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), April to October 1978 (Ashe, 1982). **KILKENNY: HA 15 -** R. Nore: Threecastles (S458626), 27 August 1981; Ballyragget (S445707), Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (all Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Castletown Bridge (S326930) and u/s Durrow (S416787), 27 August 1981 also Athanagh (S423763), 28 August 1981 (Hayes, 1991). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514), d/s Cappamore (R779504) and Dromkeen Bridge (R741480), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Carrowinsky, Glenkeen Road Bridge, Carrowinskey (L818724), 9 May 2003, DAM/WM (Murray, 2005). R. Burleemslough, Clapper Bridge Ford, Killeen, Cloonlaur (L754759). R. Bunowen, Louisburg, u/s of bridge (L807807) and R. Owenwee, u/s Aghamore Bridge, Westport (L972817), 5 August 2004, all DAM/WM (DAM). **MEATH: HA 7 -** R. Boyne: Stackallen Bridge (N918713), 12 July 1981 (Hayes, 1991); Bellinter Bridge (N894626), 21 August 1988; Ardsallagh, at St Bridget's Well (N897635), 7 July 1988 and Kilcarn Bridge, Navan (N884657), 21 August 1988 (all Murray, 1988); railway bridge, Navan (N874674), 5 July 2006 (DAM); New Bridge, Navan (N873679), 18 August 1988 (Murray, 1988). R. Blackwater: Poolboy Bridge, Navan (N871681), 18 August 1988 also Bloomsbury Bridge, Oristown (N793741) and Donaghpatrick (N819723), 19 August 1988 (Murray, 1988). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627), 16 July 1981 and Ballynoe (M693757), 14 August 1981 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168), 30 August 1982 (Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430), 19 August 1983 (Hayes, 1991). **TYRONE: HA 1 -** R. Glenelly, Crannagh Bridge, Crannagh (H594926), 17 August 2011 (PHL)**: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WATERFORD: HA 18 -** R. Blackwater, Ballyduff (W964992) and Lismore (X047988), 31 August 1981 (Hayes, 1991). **WEXFORD: HA 12 -** R. Boro, Dunamore Bridge, Enniscorthy (S963366), 29 July 1981 (Hayes, 1991). R. Slaney, Clomahon (S933534),

Ballycarney (S967488) and Edernline Bridge (S977345), 29 July 1981 (Hayes, 1991)**: HA 13 -** R. Corrock tributary, Goff's Bridge, Horetown (S870185), 12 June 2012 (DAM). **WICKLOW: HA 10 -** R. Avonmore: Castlehoward (T190833), 4 August 1983 (Hayes, 1991); Laragh Bridge (T144965), 24 June 1996, MKQ (DAM) and Lion Arch Bridge (T194833), 11 July and 27 October 1997 (Curran, 2001). R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991), 11 July and 27 October 1997 (Curran, 2001). R. Avoca, Avoca Village (T203802), 11 July 1997, FC (Curran and Murray, 2001) and October 1997 (Curran, 2001). R. Glencullen, Knocksink (O218180), 22 April 1987, DEM/DAM (Morgan, 1989). R. Glenealo, Glendalough (T090962), 16 July 1996, EMcE/DAM (McEntee, 1997)**: HA 12 -** R. Derry, Balisland (S978645), 28 July 1981 and Bridgeland (T021744), 29 July 1981 (Hayes, 1991). R. Slaney, Knickeen, Glen of Imail (S987948), Stratford Bridge (S895930) and Kilmurray (S889856), 28 July 1981 (Hayes, 1991).

***Eukiefferiella coerulescens* (Kieffer, 1926)**

ANTRIM: HA 3 - Killylane Reservoir, Magherabane, Larne (J292985), 4 May 1999 (PHL)**: HA 4 -** R. Glendun, Drumfresky, Cushendun (D193308), 2 July 2000 (Langton, 2002). R. Glenariff (Inver/Glenariff), Cushendall (D215205), 2 July 2000 (Langton, 2002). R. Glenaan, Cushendall (D218288) and R. Glenarm, Glenarm (D310148), 17 September 2011 (PHL)**: HA 5 -** Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **CARLOW: HA 12 -** R. Derreen, Acann Bridge (S900781), 29 July 1981 (Hayes, 1991). **CLARE: HA 28 -** R. Caher: Holywell, 2.5km from source (M173069), 27 October 1999 and Murroogh, 5km from source (M153089), 29 April 2000, CB (Kelly-Quinn *et al.*, 2003). L. Doo, Milltown Malbay (R113722), 11 June and 15 September 2009, EPA (DAM). **CORK: HA 21 -** L. Glenbeg, Ardgroom (V706530), 3 September 2008, EPA (DAM). **DERRY: HA 3 -** R. Bann, Coleraine (C854304), 29 March, 5 and 13 May 1999, 6 April 2000 and 2 May 2010 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 7 May 2001 (PHL). **DONEGAL: HA 1 -** L. Derg, Pettigo (H074743), 8 July 2009, EPA (DAM)**: HA 37 -** R. Eanymore, Drumagraa Bridge (G863822), 10 August 1982 (Hayes, 1991)**: HA 38 -** L. Veagh, GNP, near Castle, Glenveagh (C022211), 21 July and 9 September 2009, EPA (DAM). L. An tSeisigh, Portnablagh, Sheephaven (C043361), 1 April and 28 July 2009, EPA (DAM). L. Glen, Glen (C105292), 16 June and 8 September 2009, EPA (DAM). L. Reelan, Reelan (C131272), 6 June 2009, EPA (DAM). R. Owenveagh, Glenbeagh Cottage, GNP, Glenveagh (B990178), 30 July 1985 (Heneghan, 1986)**: HA 39 -** R. Crana, Buncrana (C347328), 15 August 1982 (Hayes, 1991). L. Fern, Millford (C180233), 9 September 2009, EPA (DAM)**: HA 40 -** R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991). **DUBLIN: HA 9 -** R. Dodder headwaters, Maureen's Brook, Featherbed (O128175), 19 December 1966 (Murray, 1972). **GALWAY: HA 30 -** L. Corrib Upper,

Oughterard (M138486), 11 April 2007, EPA (DAM). L. Maumwee, Maam Cross (L977485), 17 September 2007, EPA (DAM). L. Beaghcauneen, Ballinaboy (L679470), 6 June 2007, EPA (DAM). L. Bofin, Maam Cross (M034441), 7 June 2007, EPA (DAM)**: HA 31 -** L. Nahasleam, Maam Cross (L972440), 6 April 2006, EPA (DAM). L. Shindilla, Derreennacreeva, Maam Cross (L958460), 5 April 2006, EPA (DAM). L. Ballynahinch, Ballynahinch (L777478), 6 June 2007, EPA (DAM). L. Derryclare, Recess (L825485), 6 June 2007, EPA (DAM). **KERRY: HA 21 -** L. Brin, Derreeny (V780775), 18 June and 10 September 2008, EPA (DAM). L. Cloonaghlin, Waterville (V611708), 8 May and 19 June 2008, EPA (DAM). L. Inchiquin, Kenmare (V837629), 15 April and 17 September 2008, EPA (DAM). L. Namona, Waterville (V596711), 8 May and 19 June 2008, EPA (DAM). Eagles L., Knocknagantee (V674728), 9 August 2005, JRB (DAM)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Caragh, Lower Brida Valley (V740805), d/s Owenroe R. confluence (V720815), Bealalaw Bridge (V715832) and outflow from L. Caragh (V713924), 1975, CD (all Dowling *et al.*, 1981). L. Acoose, Slievanore, Killorglin (V755854), 19 June and 9 September 2008, EPA (DAM). L. Caragh, Killorglin (V719904), 15 July 2008, EPA (DAM). L. Cummernamuck, Killorglin (V745897), 16 April 2008, EPA (DAM). R. Clydagh: Caherbarnagh (W202842), u/s Clydagh Bridge (W114826) and Knocknagowan (W187837), April to November 1978 (Ashe, 1982). R. Flesk: d/s Clydagh/Loo confluence (W084814), Garries Bridge (W082835), Flesk Bridge (W034876), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), April to November 1978 (all Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), April to November 1978 (Ashe, 1982). **MAYO: HA 30 -** L. Aille, Aille, Westport (M071807), 8 August 2008, EPA (DAM). L. Mask, west shore, Toormakeady (M097647), 14 April 2008, EPA (DAM)**: HA 32 -** R. Bunowen, d/s bridge, Laghta Eighter (L852751), 30 September 2004, DAM/WM (DAM). R. Owengarve, Rosgalliv Bridge, Mulranny (L886962), 4 August 2004, DAM/WM (DAM). R. Owenwee, u/s Aghamore Bridge, Westport (L972817), 5 August 2004 and Belclare Bridge, Westport (L959822), 30 September 2004, DAM/WM (DAM). Outflow of a mountain stream on the north coast of inner Killary Harbour (L869694), 5 June 2002, DAM/WM (DAM). L. Doo, Delphi, west shore (L835681), 5 April, 9 May and 12 July 2006 and north east shore (L834686), 22 September 2008, EPA (DAM). L. Glencullin, Delphi, south west shore (L819696), 25 August 2008 and north shore (L818711), 22 September 2008, EPA (DAM). L. Feeagh, Newport (L975983), 24 July and 17 September 2008, EPA (DAM)**: HA 33 -** R. Owenmore, Bangor Erris (F863228), 18 August 1983 (Hayes, 1991). Hillside stream in Keem Bay, Achill Island (F560043), 5 August 2004, DAM/WM (DAM). L. Acorrymore, Achill Island (F578057), 29 September 2004, DAM/WM (DAM) also 7 April, 16 July and 17 September 2008, EPA (DAM)**: HA 34 -** L. Conn, Crossmolina, north west shore (G165144), 15 April 2008, EPA (DAM). L. Cullin, Drummon Wood (G229028), 15 April 2008,

EPA (DAM) and north east shore (G235046), 20 August 2008, EPA (DAM). L. Alone, Ox Mountains (G367157), 5 August 2005, JRB/MC (DAM). **TYRONE: HA 1 -** Dennet Stream, Essbeg Bridge, Lisnaskee (H384306), 27 June 2000 (Langton, 2002). **WICKLOW: HA 10 -** R. Glendasan, Laragh, WMNP (T100982), 24 June 1996 (DAM). R. Glencullen, Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989). R. Glenealo, Glendalough (T090962), and outflow from Upper Glendalough Lake, Laragh, WMNP (T109964), 16 July 1996, EMcE/DAM (McEntee, 1997). Upper Glendalough Lake, Laragh, WMNP (T100960), 29 July 2009, EPA (DAM). L. Bray Lower, Glencree (O140163), 2 April 2009, EPA (DAM). L. Ouler, Tonelagee (O091023), 8 August 2005, JRB (DAM)**: HA 12 -** R. Slaney, Knockgarrigan, Glen of Imail (S936937), 28 July 1981 (Hayes, 1991).

***Eukiefferiella cyanea* Thienemann, 1936**

MAYO: Clare Island - R. Dorree, 100m above sea, Maum (L708865), 28 April 2000, DAM/WM (Murray and Murray, 2003).

***Eukiefferiella devonica* (Edwards, 1929)**

ANTRIM: HA 3 - Kells R, Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002)**: HA 4 -** R. Brymore (Brymore Water), Brymore Bridge (D162275) and R. Glenariff (Inver/Glenariff), Cushendall (D215205), 2 July 2000 (Langton, 2002). **CARLOW: HA 12 -** R. Derreen, Acann Bridge (S900781), 29 July 1981 (Hayes, 1991). **CORK: HA 20 -** R. Bandon, Long Bridge, Dunmanway (W242631), 18 April, 25 September, 31 October and 28 November 1980 and 17 January 1981; Bealabouy Bridge, Dunmanway (W257514), 20 February, 20 March and 31 October 1980; u/s Ballineen (W331537), 28 November 1980; 2.5km d/s Bandon (W516569), 20 February 1980 (all Morgan, 1982). **DERRY: HA 3 -** R. Bann, Coleraine (C854304), 23 June 1999, 17 and 25 May, 24 June and 8 October 2000, 27 April and 16 June 2001, 27 July, 3 and 17 August 2012 (all PHL). **DONEGAL: HA 38 -** R. Owenwee, Derrynacarrow, Doocharry (B880078), 22 August 1984 (DAM). R. Owenveagh, GNP, Glenbeagh Cottage, Glenveagh (B990178), 30 July 1985, LJH (Heneghan, 1986). **DOWN: HA 3 -** R. Muddock, Muddock Bridge, Rathfriland (J235342), 19 September 1997 (PHL). **FERMANAGH: HA 36 -** R. Belbarrinagh, Belcoo (H112309) and R. Sruh Croppa, Cuilcagh Mountain (H111329), 29 June 2000 (Langton, 2002). **GALWAY: HA 25 -** R. Woodford, Woodford (M732000), 24 May 2003 (PHL)**: HA 30 -** L. Beaghcauneen, Ballinaboy (L679470), 5 April 2007, EPA (DAM). R. Owenriff, Oughterard (M112426), 25 May 2003 (PHL). **KERRY: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Caragh, Upper Brida Valley (V785810), Lower Brida Valley (V740805), d/s Owenroe R. confluence (V720815), Bealalaw Bridge (V715832) and outflow from L. Caragh (V713924), 1975, CD (all

Dowling *et al.*, 1981). R. Torc, Torc Mountain, Killarney (V959830), March 1973 (DAM). Curraghalia stream, north west of Moll's Gap (V845789), 17 April 2004, JRB (DAM). R. Clydagh, Caherbarnagh (W202842), u/s Clydagh Bridge (W114826) and Knocknagowan (W187837), April 1978 to March 1979 (Ashe, 1982). R. Flesk: d/s Clydagh/Loo confluence (W084814), Garries Bridge (W082835), Flesk Bridge (W034876), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), April 1978 to March 1979 (Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), April 1978 to March 1979 (Ashe, 1982). R. Owenmore, Boherboy, Cloghane (Q513107), 2 May 1999, CB (PJA/NMI). **MAYO: HA 32 -** Westport L., Westport Woods Hotel, Westport (L985843), 7 May 2004 and R. Bunowen, Louisburg (L807807), 5 August and 30 September 2004, DAM/WM (DAM). L. Fin, Delphi (L841657), 19 May 2005, EPA (DAM)**: HA 33 -** hillside stream in Keem Bay, Achill Island (F560043), 5 August 2004, DAM/WM (DAM)**: Clare Island -** R. Dorree, 100m above sea, Maum, (L708865), 28 April 2000, DAM/WM (Murray and Murray, 2003). **SLIGO: HA 34 -** R. Moy, Metal Bridge, Tobercurry (G464138) and Annagh (G466123), 30 August 1982 (Hayes, 1991)**: HA 35 -** L. Gill, Sligo (G753335), 3 April 2008, EPA (DAM). **WEXFORD: HA 12 -** R. Boro, Dunamore Bridge, Enniscorthy (S963366), 29 July 1981 (Hayes, 1991). **WICKLOW: HA 10 -** R. Avonmore, Castlehoward (T190833), 4 August 1983 (Hayes, 1991). R. Glendasan, Laragh, WMNP (T100982), 24 June 1996, DAM (Murray, 2005). R. Glenealo, opposite disused tailings, Glendalough (T093960), 16 July 1996, LF (Finnegan, 1998). R. Glenealo, WMNP, u/s Glendalough Lake (T090962), 16 July 1996 and outflow stream from Glendalough Lake, WMNP (T109964), 16 July 1996, EMcE/DAM (McEntee, 1997). Upper Glendalough Lake, Laragh, WMNP (T100960), 29 July 2009, EPA (DAM). R. Glencullen, Knocksink (O218180), 29 June 1987, DEM/DAM (Morgan, 1989)**: HA 12 -** R. Derry, Balisland (S978645) and Bridgeland (T021744), 29 July 1981 (Hayes, 1991). R. Slaney, Knickeen, Glen of Imail (S987948) and Knockgarrigan, Glen of Imail (S936937), 28 July 1981 (Hayes, 1991).

***Eukiefferiella dittmari* Lehmann, 1972**

CLARE: HA 28 - R. Caher, Holywell, 2.5km from source (M173069), 27 October 1999, CB (DAM) and Murroogh, 5km from source (M153089), 27 October 1999, CB (PJA/NMI). L. Keagh, north shore, Milltown Malbay (R100813), 15 September 2009, EPA (DAM) and 19 September 2012, DAM/WM (DAM). **CORK: HA 20 -** R. Bandon: Long Bridge, Dunmanway (W242631), 18 April to 22 December 1980 and 17 January 1981; Bealabouy Bridge, Dunmanway (W257514), 20 February to 22 December 1980; u/s Ballineen (W331537), 20 February to 28 November 1980; Ballineen Bridge (W434538), 20 March to 31 October 1980; Castle Bernard (u/s Bandon) (W472546), 20 March to 22 December 1980; 2.5km d/s Bandon

(W516569), 18 April, 31 October and 28 November 1980 (all Morgan, 1982). **DERRY: HA 2 -** burn at Largantea picnic area, Formoyle, Coleraine (C738287), 9 June 2000 (Langton, 2002)**: HA 3 -** R. Bann, Coleraine (C854304), 5 October 2012 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 4 July and 13 October 2000 (Langton, 2002) also 7 May 2001 (PHL). **DONEGAL: HA 36 -** R. Behy tributary, Ballyshannon (G942640), 28 March 2004 (PHL)**: HA 37 -** R. Oily, Claggen (G751803), 8 August 1982 (Hayes, 1991). L. Shinvagh, Carricode (H005675), 28 March 2004 (PHL)**: HA 38 -** L. Mulladerg, The Rosses (B775199), 19 July 2000 (Langton, 2002)**: HA 39 -** R. Leannan, Claragh (C197210), 13 August 1982 (Hayes, 1991). R. Glashagh, Drumbologe, Letterkenny (C096153), 18 July 2000 (Langton, 2002). **DOWN: HA 3 -** R. Muddock, Muddock Bridge, Rathfriland (J235342), 19 September 1997 (PHL). **FERMANAGH: HA 36 -** R. Bannagh, Drummoney Falls, Pettigo (H168676), 17 August 2011 (PHL). R. Colebrook, Tattenbuddagh Bridge, Brookeborough (H458428), 3 October 1997 (PHL); R. Colebrook tributary, Maguiresbridge (H348387), 29 September 1998 (PHL). **GALWAY: HA 25 -** R. Woodford, Woodford (M732000), 24 May 2003 (PHL)**: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 and R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991). **KERRY: HA 22 -** L. Cummernamuck, Killorglin (V745897), 18 July 2008, EPA (DAM). **KILDARE: HA 9 -** R. Liffey, Sallins (N881245), 17 July 1983 (Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Kilbricken (S362898), 27 August 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Bunowen, Louisburg, u/s bridge, Louisburg (L807807), 30 September 2004, DAM/WM (DAM). R. Owengarve, Rosgalliv Bridge, Mulranny (L886962), 4 August 2004, DAM/WM (DAM). **MEATH: HA 7 -** R. Boyne: Bellinter Bridge (N894626), 21 August 1988 and Ardsallagh, at St Bridget's Well (N897635), 7 July 1988 (Murray, 1988). R. Blackwater, Poolboy Bridge, Navan (N871681), 18 August 1988 (Murray, 1988)**: HA 8 -** R. Nanny tributary, Boolies, Duleek (O044654), 6 June 2006, DAM/WM (DAM). **OFFALY: HA 25 -** R. Little Brosna: Milltown Park (S068907), New Bridge (N016088) and Cloghan (M046209), 2 September 1982 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627) and Ballyforan (M817464), 16 July 1981 (Hayes, 1991)**: HA 30 -** R. Dalgan, Clonfad (M518712), 20 August 1981, BPH (Murray, 2005). **TYRONE: HA 1 -** R. Glenelly, Crannagh Bridge, Crannagh (H594926), 17 August 2011 (PHL).

***Eukiefferiella gracei* (Edwards, 1929)**

CLARE: HA 28 - R. Caher, Holywell, 2.5km from source (M173069), 29 April 2000, CB (Kelly-Quinn *et al.*, 2003). **DUBLIN: HA 10 -** R. Glencullen tributary, Glendoo (O160212), 1970, KC (Clabby and Bracken, 1976)**: HA 9 -** R. Dodder tributary (Slade Brook), Glenasmole (O103205), 26 May 1947 (CFH). **GALWAY: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 and R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991)**: HA 32 -**

stream near Administration Centre, CNP, Letterfrack (L717572), 18 September 1986 (Heneghan, 1987). **MEATH: HA 7 -** R. Kinnegad, Kinnegad (N601448), June 1989 (Murray and Lynch, 1991). Yellow R., tributary of R. Blackwater, Randalstown, Navan (N835710), 22 June 1995 (Finnegan, 1998); adjacent to tailings pond, Randalstown, Navan (N841715), 5 May 1995 (Finnegan, 1998)**: HA 8 -** R. Nanny, road bridge u/s Duleek (O035655) and at Duleek (O050683), 6 June 2006, DAM/WM (DAM); R. Nanny tributary, Boolies, Duleek (O044654), 6 June 2006, DAM/WM (DAM). **SLIGO: HA 35 -** L. Gill, Sligo (G782350), 8 September 2008, EPA (DAM). **TIPPERARY: HA 25 -** R. Kilmastulla, Kilmastulla Bridge (R728698), 16 April 1976 (Murray, 2005). **WICKLOW: HA 10 -** R. Glencullen, Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989); R. Glencullen, Brockey (O169207), Glencullen Bridge (O192194) and u/s Glencullen Bridge (O190195), 1970, KC (Clabby and Bracken, 1976).

***Eukiefferiella ilkleyensis* (Edwards, 1929)**

ANTRIM: HA 3 - Clogh R., Clough Mills (D105109), 2 July 2000 (Langton, 2002). L. Neagh, Antrim Bay (J135866), 28 March 2001 (PHL). Kells R., Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002)**: HA 4 -** R. Bush, Stranocum (D009307), 2 July 2000 (Langton, 2002)**: HA 5 -** Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **CARLOW: HA 12 -** R. Slaney, Motabower Bridge (S832778), Kilcarry Bridge (S893624) and Kildavin (S899597), 28 July 1981 (all Hayes, 1991). R. Derreen, Acann Bridge (S900781), 29 July 1981 (Hayes, 1991). **CAVAN: HA 36 -** R. Erne, Carrigan (N391935), 27 August 1982 and Drumbarry (N462951), 17 August 1982 (Hayes, 1991). **CLARE: HA 28 -** R. Annageeragh, Moyglass Bridge, d/s L. Doo (R078725), 30 July 1982 (Hayes, 1991). R. Creegh, Mountrivers Bridge, Doonbeg (Q991659) and R. Doonbeg, Derryard (Q979644), all 30 July 1982 (all Hayes, 1991). R. Silverhill, Milltown Malbay (R096792), 23 April 2004, JRB (DAM). **CORK: HA 18 -** R. Blackwater: Lombardstown (W463968), 1 September 1981; Duncannon (W180931) and Roskeen Bridge, Banteer (W444988), 2 September 1981 (all Hayes, 1991)**: HA 20 -** R. Ilen, Hollybrook (W117363), 24 August 1983 (Hayes, 1991). R. Bandon: Long Bridge, Dunmanway (W242631), 20 March and 31 October 1980; Bealabouy Bridge, Dunmanway (W257514), 17 January 1981; u/s Ballineen (W331537), 20 March, 18 April, 30 June and 31 October 1980; Ballineen Bridge (W434538), 25 September 1980; Castle Bernard (u/s Bandon) (W472546), 20 March to 22 December 1980; R. Bandon, 2.5km d/s Bandon (W516569), 20 February to 28 November 1980 and 17 January 1981 (all Morgan, 1982). **DERRY: HA 2 -** R. Roe, Deerpark Wood, Limavaddy (C682203), 9 June 2000 and Largy Bridge, Limavaddy (C681202), 14 July 2000 (Langton, 2002). Castle R., Ardmore Bridge, Limavady (C706207), 9 June 2000 (Langton, 2002)**: HA 3 -** Downhill beach stream, Coleraine (C754326), 9 June 2000 (Langton, 2002). Downhill Forest stream, Coleraine (C759348), 21 August 2001 and 24 March 2002 (PHL). R.

Aghadowey, Ballybritain Bridge (C859212) and R. Macosquin, Black Bridge, Ballylintagh (C854256), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304): 18 March to 1 November 1999, 6 January to 16 July 2000, 26 April and 16 June 2000, 30 June 2001, 22 September 2002, 11, 18 and 25 April, 2 May 2010, 27 July 2012 (all PHL). R. Moyola, New Bridge, Magherafelt (H955905), 4 July and 13 October 2000 (Langton, 2002) also 7 May 2001 (PHL). **DONEGAL: HA 38 -** R. Tullaghobeg, Falcarragh (B925319) and Millmount (B933304), 12 August 1982 (Hayes, 1991). L. Mulladerg, The Rosses (B775199), 19 July 2000 (Langton, 2002)**: HA 39 -** R. Crana, Buncrana (C347328) and Ballymagan (C379344), 15 August 1982 (Hayes, 1991). **DUBLIN: HA 9** – R. Dodder: Landsdown Road bridge (O180327) 1947, CFH (Grey, 1946) and 28 March 1949 (Reilly, 1951); Ballsbridge (O180330) 1947, CFH (Grey, 1946), Clonskeagh, (O174306), 1946, Milltown (O168303), 14 May 1946, CFH (Grey, 1946); Firhouse (O104274) 1946, CFH (Grey, 1946) Fort Bridge, Bohernabreena, (O009242), 10 January 1949, CFH (Reilly, 1951) **GALWAY: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 and R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991)**: HA 30 -** L. Corrib (M1545), 1980, BC (DAM). R. Grange, Grange Bridge (M428498), 16 August 1981 (Hayes, 1991)**: HA 32 -** R. Dawros, Tullywee Bridge, Letterfrack (L730586), 18 August 1981 (Hayes, 1991). **KERRY: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Clydagh, Caherbarnagh (W202842), u/s Clydagh Bridge (W114826) and Knocknagowan (W187837), April 1978 to March 1979 (Ashe, 1982). R. Flesk, d/s Clydagh/Loo confluence (W084814), Garries Bridge (W082835), Flesk Bridge (W034876), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), April 1978 to March 1979 (Ashe, 1982). **KILDARE: HA 7 -** R. Boyne, Ballyboggan (N639402), 9 July 1981 (Hayes, 1991)**: HA 9 -** R. Liffey: Sallins (N881245), 17 July 1983 (Hayes, 1991); Straffan Bridge (N924293), 1929, WEF (Humphries and Frost, 1937) and 15 July 1983 (Hayes, 1991). **KILKENNY: HA 15 -** R. Nore: Threecastles (S458626), 27 August 1981; Ballyragget (S445707), Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (Hayes, 1991). R. Clogh, Clogh (S565790), 10 March 1976, CD (DAM). **LAOIS: HA 15 -** R. Nore: Kilbricken (S362898), Shanahoe Bridge (S407858) and u/s Durrow (S416787), 27 August 1981; Athanagh (S423763), 28 August 1981 (Hayes, 1991). R. Tonet, Monnagh, Coolrain (S265927), 29 April 1999, CB (PJA/NMI). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514), d/s Cappamore (R779504) and Dromkeen Bridge (R741480), 8 September 1981 (Hayes, 1991). **MAYO: HA 33 -** R. Owenmore, Bangor Erris (F863228), 18 August 1983 and R. Glenlassra, Belderg (G023407), 19 August 1983 (Hayes, 1991). Keem stream, Keem Bay, Achill Island (F560043), 5 August 2004, DAM/WM (DAM)**: HA 34 -** R. Moy, Bellanacurra (G403047) and Ballylahan (M227992), 29 August 1982 (Hayes, 1991). **MEATH: HA 6 -** R. Dee, Drumconrath (N910894), 27 July 1983 (Hayes, 1991)**: HA 7 -** R.

Boyne: Scarrif Bridge (N733527), 9 July 1981 (Hayes, 1991) and June 1989, JL/DAM (Murray and Lynch, 1991); Newtown, Trim (N815571), 9 July 1981 (Hayes, 1991); Stackallen Bridge (N918713), 12 July 1981 (Hayes, 1991), 17 August 1988 (Murray, 1988) and 19 July 1989 (DAM); Bellinter Bridge (N894625), 21 August 1988 (Murray, 1988) and 11 August 1999, DAM/WM (DAM); Ardsallagh, at St Bridget's Well (N897635), 7 July 1988; Kilcarn Bridge, Navan (N884657), 21 August 1988 and New Bridge, Navan (N873679), 18 August 1988 (all Murray, 1988); Slane Bridge (N965737), 19 July 1989 (DAM). R. Blackwater: Bloomsbury Bridge, Oristown (N793741) and Donaghpatrick (N819723) 19 August 1988; Poolboy Bridge, Navan (N871681), 18 August 1988 (all Murray, 1988). R. Stonyford, Rathkenna (N684572) and R. Mongagh, Castlejordan (N590389), June 1989, JL/DAM (Murray and Lynch, 1991). Yellow R., tributary to R. Blackwater, Randalstown, Navan (N835710), 22 June 1995 (Finnegan, 1998)**: HA 8 -** R. Nanny, road bridge u/s Duleek (O035655) and R. Nanny tributary, Boolies, Duleek (O044654), 6 June 2006, DAM/WM (DAM). **OFFALY: HA 25 -** R. Little Brosna: Brosna Bridge (S077938) and New Bridge (N016088) also R. Brosna, Cloghan (M046209), 2 September 1982 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck: Castlecoote (M809627) and Ballyforan (M817464), 16 July 1981; Athleague (M825758) and Mount Talbot (M813531), 14 August 1981 (all Hayes, 1991). L. O'Flynn, south east shore, Ballinlough (M585786), 9 April 2008, EPA (DAM)**: HA 30 -** R. Dalgan, Clonfad (M518712), 20 August 1981 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168), 30 August 1982 (Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430) and R. Easky, Easky (G377378), 19 August 1983 (Hayes, 1991). **TIPPERARY: HA 15 -** R. Nore: Clonakenny (S116805), 18 August 1982, BPH (Hayes, 1991; Murray, 2005); Nore Bridge (S133816) and Quaker Bridge (S211868), 27 August 1981 (Hayes, 1991)**: HA 16 -** R. Breagagh, Archerstown Bridge (S140568), 22 May 1992 (Murray and Lynch, 1992). R. Clover, Twomileborris (S199590), 6 July 1992 and R. Drish, Athlummon Bridge (S177593), 6 September 1991 (all Murray and Lynch, 1992). **TYRONE: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WATERFORD: HA 18 -** R. Blackwater, Ballyduff (W964992) and Lismore (X047988), 31 August 1981 (Hayes, 1991). **WEXFORD: HA 12 -** R. Boro, Dunamore Bridge, Enniscorthy (S963366) also R. Slaney, Clomahon (S933534) and Ballycarney (S967488), 29 July 1981 (Hayes, 1991). R. Bannr, Coolgreany (T128713), 7 April 2004, JRB (DAM). **WICKLOW: HA 10 -** R. Avonbeg, Meetings Bridge (T188831), 11 July and 27 October 1997 (Curran, 2001). R. Avonmore, Lion Arch Bridge (T194833), 11 July 1997 (Curran, 2001). R. Avoca: Whitebridge, Tigroney (T198821), 11 July and 27 October 1997 (Curran, 2001); Avoca Village (T203802), 11 July 1997, FC (Curran and Murray, 2001) and 27 October 1997 (Curran, 2001)**: HA 12 -** R. Slaney, Knickeen, Glen of Imail (S987948), Knockgarrigan, Glen of Imail (S936937), Stratford Bridge (S895930) and Kilmurray (S889856), 28 July 1981 (Hayes, 1991)**: HA 9 -** R. Liffey,

Ballysmuttan Bridge (O157148), 1929, WEF (Humphries and Frost, 1937).

Eukiefferiella minor/fittkaui (pupal exuviae)
GALWAY: HA 31 - L. Ahalia, Maam Cross (L971402), 22 April 2009, EPA (DAM). **SLIGO: HA 35 -** L. Gill, Sligo (G782350), 11 June, 20 August and 8 September 2008, EPA (DAM).

***Eukiefferiella minor* (Edwards, 1929)**
DERRY: HA 3 - R. Bann, Coleraine (C854304), 10 March 2000 (PHL). **DONEGAL: HA 38 -** stream on Slieve Snaght, Bingorm, GNP, Glenveagh (B940148), 4 June 1986; R. Owenveagh, Glenbeagh Cottage, Glenveagh (B990178), 30 July 1985 and inflow stream to north east shore of L. Veagh, 250m from lake, Glenveagh (C031217), 15 August 1985, all Heneghan (1986). **DUBLIN: HA 9 -** R. Dodder: above Bohernabreena reservoir (O109202) 23 February 1949; Aqueduct, Bohernabreena (O104205) 10 January 1949; Fort Bridge, Bohernabreena (O009242), 28 March and 5 April 1949 (all Reilly, 1951 sub *E. flavipes*). **GALWAY: HA 32 -** R. Polladirk, Letterfrack (L741565), 19 September 1986 (Heneghan, 1987). **KERRY: HA 21 -** Eagles L., Knocknagantee (V674728), 25 April 2005, JRB/MC (DAM)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). L. Coomloughra, Caher Mountain, Carrauntoohil (V783849), 26 April 2005, JRB/MC (DAM). R. Clydagh: Caherbarnagh (W202842), u/s Clydagh Bridge (W114826) and Knocknagowan (W187837), April, May and October to December 1978, February and March 1979 (Ashe, 1982). R. Flesk, d/s Clydagh/Loo confluence (W084814), d/s Whitebridge (V987900), d/s New Bridge (V963885), May to October 1978 (Ashe, 1982). **MAYO: Clare Island -** R. Dorree, 100m above sea coast, Maum (L708865), 28 April 2000 (Murray and Murray, 2003). **WICKLOW: HA 10 -** R. Glendasan, Laragh, WMNP (T100982), 24 June 1996 (DAM). R. Glencullen, Knocksink (O218180), 18 May 1987 (Morgan, 1989). R. Glenealo, Glendalough (T090962) and outflow from Upper Glendalough Lake, Laragh, WMNP (T109964), 16 July 1996, EMcE/DAM (McEntee, 1997)**: HA 12 -** R. Slaney, Knickeen, Glen of Imail (S987948), 28 July 1981 (Hayes, 1991).

***Eukiefferiella tirolensis* Goetghebuer, 1938**
DERRY: HA 3 - R. Bann, Coleraine (C854304), 10 March 2000 (PHL). **DONEGAL: HA 38 -** R. Owenveagh, Glenbeagh Cottage, Glenveagh (B990178), 30 July 1985 (Heneghan, 1986). **GALWAY: HA 25 -** R. Woodford, Woodford (M732000), 24 May 2003 (PHL). **KERRY: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Carrowinsky, Glenkeen, Carrowinskey (L818724), 9 May 2003, DAM/WM (DAM). L. Fin, Delphi (L841657) 19 May 2005, EPA (DAM). **WICKLOW: HA 10 -** R. Glencullen, Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989)**: HA 12 -** R. Slaney,

Knickeen, Glen of Imail (S987948), 28 July 1981 (Hayes, 1991).

***Eurycnemus crassipes* (Meigen, 1810)**

CARLOW: HA 12 - R. Slaney, Kilcarry Bridge (S893624) and Kildavin (S899597), 28 July 1981 (Hayes, 1991). **CORK: HA 20 -** R. Ilen, Madore (W103419) and Hollybrook (W117363), 24 August 1983 (Hayes, 1991). R. Bandon, Long Bridge, Dunmanway (W242631), 25 August 1980 (Morgan, 1982). **KERRY: HA 21 -** R. Finnihy, outflow from L. Barfinnihy (V850766), 1 August 1987 (DAM)**: HA 22 -** R. Clydagh, u/s Clydagh Bridge (W114826), May to September 1978 (Ashe, 1982). R. Flesk: d/s Clydagh/Loo confluence (W084814), May to September 1978 (Ashe, 1982); d/s Whitebridge (V987900), September 1972 (DAM), 27 July 1974 (Murray, 2005) and 27-28 July 1976 (Murray and Ashe, 1981) also May to September 1978 (Ashe, 1982); u/s Newbridge (V978900), 30 May 1973 (Douglas and Murray, 1980); d/s Newbridge (V963885), May to September 1978 and u/s L. Leane (V964894), May to September 1978 (Ashe, 1982) and 8 August (Ashe *et al.*, 2000). R. Loo, Aughnanus Bridge, Crohane (W045790), May to September 1978 (Ashe, 1982). **LAOIS: HA 15 -** R. Nore, Athanagh (S423763), 28 August 1981 (Hayes, 1991). **MAYO: HA 34 -** R. Moy, Ballylahan (M227992), 29 August 1982 (Hayes, 1991). **MEATH: HA 7 -** R. Boyne: Ardsallagh, adjacent to St Bridget's Well (N897635), 15 June 1980 and 27 July 1984 (DAM); Kilcarn Bridge, Navan (N884657), 21 August 1988 (Murray, 1988), 16 October 1994 (DAM) and 15 August 1995 (Murray, 2005); railway bridge, Navan (N874674), 5 July 2006 (DAM); Stackallen Bridge (N917713), 17 August 1988 (Murray, 1988) and 19 July 1989 (DAM); Knowth Weir (N995720), 19 July 1989 (DAM). R. Blackwater, Bloomsbury Bridge, Oristown (N793741), 19 August 1988, DAM (Murray, 1988). **OFFALY: HA 25 -** R. Shannon, Shannon Bridge (M967254), 15 August 1981 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck: Castlecoote (M809627), 16 July 1981; Mount Talbot (M813531), 14 August 1981 and Newtown (M844346), 15 August 1981 (all Hayes, 1991). R. Lung, Lung Old Bridge, Tibohine (M652928), 15 June 1999 (DAM). **SLIGO: HA 35 -** R. Drumcliff, Glencar (G734430) and R. Easky, Easky (G377378), 19 August 1983 (Hayes, 1991). **WATERFORD: HA 18 -** R. Blackwater, Ballyduff (W964992) and Lismore (X047988), 31 August 1981 (Hayes, 1991). **WEXFORD: HA 12 -** R. Slaney, Ballycarney (S967488), 29 July 1981 (Hayes, 1991). **WICKLOW: HA 10 -** R. Glencullen, Knocksink (O218180), 24 July 1987, DEM/DAM (Morgan, 1989).

***Georthocladius* (*Georthocladius*) *luteicornis* (Goetghebuer, 1941)**

KERRY: HA 22 - Muckross Lake, Killarney (V950853), 24 April 2008, EPA (DAM). R. Flesk, Flesk Bridge (W034876), April 1978 (Ashe, 1982; Murray, 2005). **MAYO: HA 32 -** L.

Glencullin, Delphi, north west shore (L815699), 26 June 2008, EPA (DAM)**: HA 33 -** L. Carrowmore, Derreens, Bangor Erris (F833299), 9 April 2008, EPA (DAM).

***Gymnometriocnemus* (*Gymnometriocnemus*) *subnudus* (Edwards, 1929)**
DONEGAL: HA 38 - Glenlack, near L. Veagh, Glenveagh (C003183), 25 May 1986 (Heneghan, 1986; Murray, 1996). **MEATH: HA 7 -** pond, Ardsallagh (N896632), 22 April 2005 (Murray, 2005)**: HA 8 -** lawn, Meadesbrook, Kilmoon (O040594), 5 May 2005 (DAM) and stream-pond area, Meadesbrook, Kilmoon (O038594), 7 May 2005 (DAM).

***Gymnometriocnemus* (*Raphidocladius*) *brumalis* (Edwards, 1929)**
ANTRIM: HA 3 - Killylane Reservoir, Magherabane, Larne (J292985), 8 May 1999 (PHL). **KERRY: HA 22 -** L. Leane, Killarney, Bog Bay (V963866), January 1973, DAM (Douglas and Murray, 1980). Curraghalia stream, north west of Moll's Gap, Killarney (V845789), 17 April 2004, JRB (DAM).

***Halocladius* (*Halocladius*) *fucicola* (Edwards, 1926)**
CORK: HA 20 - L. Ine, Skibbereen (W094287), 27 April 1983, MJC (PJA/NMI). **DUBLIN: HA 8 -** Skerries (O242610), 21 March 1976 (DAM)**: HA 9 -** Dalkey Island, Dalkey (O277262), 11 March 1952, CFH (DAM). **LOUTH: HA 6 -** Clogher Head, Port Oriel (O175845), 20 July 2000 DAM/WM (Murray, 2005). **MAYO: Clare Island -** cove, south of Graine Wael Castle (L716851) and Portakilly Harbour, Strake (L692842), 5 June 2002 (Murray and Murray, 2003). **WEXFORD: HA 13 -** Carnsore (T124046), 18 April 1976, BH (Healy and McGrath, 1998). Hook Head (X731973), 13 June 2012 (DAM). **WICKLOW: HA 10 -** Greystones Harbour (O297127), 2 August 2000, DAM/WM (DAM).

***Halocladius* (*Halocladius*) *variabilis* (Staeger, 1839)**
ANTRIM: HA 4 - Murlogh Bay, Fair Head (D198420), 7 July 2002 (PHL). **CLARE: HA 27 -** Diamond Rock, Kilkee (Q868600), Finavarra (M273123) and Doonbeg (Q963660), 26 July 1999 (Murray, 2005)**: HA 28 -** Black Head (M173110), 26 July 1999 (Murray, 2000). **DONEGAL: HA 39 -** L. Swilly, Newtown Cunningham, mostly stagnant drain (C311197) and impoundment (C306195), 21 June 2002 (Langton, 2002). **DUBLIN: HA 8 -** Skerries (O242610), 13 July 1999 (DAM)**: HA 9 -** Bull Wall, Clontarf (O210360), August 1985, BH (DAM). Killiney (O261250), 10 December 1951 and 29 January 1952, CFH (DAM). Seapoint (O227291), 1 March 1968 (Murray, 1972). Sandycove, at "forty foot" bathing site (O259282), 30 March 1981 (PJA/NMI). **GALWAY: HA 29 -** Tracht Beach, Kinvarra (M342143), 10 August 1998; Finnavarra, Kinvarra (M250126) and Rine (M247112), 27 November 2010

(Garbary and Brown, 2011)**: HA 31 -** L. Carafinla, Cashla (L963290), 10 August 1998, BH (DAM)**: HA 31 -** Mwenish Bay, Carna (L788317), July 1977, SC (DAM). **LOUTH: HA 6 -** Clogher Head, Port Oriel (O175845), 20 July 2000 (DAM). **MAYO: HA 32 -** Carrickvegraly Point, Roonagh, (L743806), 27 April 2000 (Murray and Murray, 2003); south of Roonagh Pier, Roonagh (L744808), 27 July 2000, (DAM). Seashore at outflow of stream, Killary (L869694), 5 June 2002, DAM/WM (DAM)**: Clare Island -** roadside at Bayview Hotel (L716856), and coastal marine pool, Bayview Hotel (L717857), 28-29 April 2000 (Murray and Murray, 2003; Murray, 2005).

***Halocladius* (*Halocladius) varians* (Staeger, 1839)**

ANTRIM: HA 4 - Murlogh Bay, Fair Head (D198420), 19 May 2002 (PHL). **CORK: HA 20 -** L. Ine, Skibbereen (W094287), 23 August 1987, MH (PJA/NMI). **DERRY: HA 3 -** R. Bann, Coleraine (C854304), 8 and 26 August, 7 and 22 September 1999, 16 July and 8 October 2000 (PHL). **GALWAY: HA 31** – L. na Aibhnin, coastal lagoon, Camus Bay (L947315), 27 August 1998, BH (Murray, 2005). **WEXFORD: HA 13 -** estuary at Fethard (S794047), 13 June 2012 (DAM).

***Halocladius* (*Psammocladius*) *braunsi* (Goetghebuer, 1942)**

DERRY: HA 3 - seacoast near R. Bann, Coleraine (C855304), 14 March 1977 (Cranston and Hockin, 1981). **GALWAY: Aran Island -** Inishmor, L. Cabhrugh, Portcabhrugh (L857112), 23 August 1998, BH (Murray, 2005).

***Heleniella ornaticollis* (Edwards, 1929)**

ANTRIM: HA 5 - Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **CORK: HA 18 -** R. Blackwater, Knocknagree (W159975), 2 September 1981 (Hayes, 1991)**: HA 19 -** Cruppoge stream, Kilcorney (W367851), 16 April 2004, JRB (DAM)**: HA 20 -** R. Ilen, Drimoleague (W098454) and Madore (W103419), 24 August 1983 (Hayes, 1991). **DERRY: HA 1 -** inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 10 May 2001 (PHL)**: HA 2 -** R. Ballykelly, Ballykelly (C623211), 9 June 2000 (Langton, 2002)**: HA 3 -** R. Moyola, New Bridge, Magherafelt (H955905), 7 May 2001 (PHL). **DONEGAL: HA 37 -** R. Eanymore, Letterbara Bridge (G883825) and Drumagraa Bridge (G863822), 10 August 1982 (Hayes, 1991)**: HA 38 -** R. Ray, Muckish Gap (B993268) and Crocnalaragh (B989272), 12 August 1982 (Hayes, 1991). L. Barra, Commeen (B935119), 22 April 2009, EPA (DAM)**: HA 40 -** R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991). **GALWAY: HA 30 -** stream at N59 picnic site, Moycullen (M204326), 25 May 2003 (PHL)**: HA 32 -** R. Owenglin, Clifden (L677506) and R. Dawros, Tullywee Bridge, Letterfrack (L730586), 18

August 1981 (Hayes, 1991). L. Pollacappul, Kylemore (L754582), 5 June and 10 September 2007, EPA (DAM). **KERRY: HA 19 -** R. Bohill, Ballyvourney (W200811), 16 April 2004, JRB (DAM)**: HA 21 -** R. Inny, Scarriff Bridge (V504696), 24 August 1983 (Hayes, 1991). L. Brin, Derreeny (V780775), 10 September 2008, EPA (DAM). L. Inchiquin, Kenmare (V837629), 15 April 2008, EPA (DAM)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). Killarney, no data (V950890), 1928, FWE (Edwards, 1929). R. Clydagh, u/s Clydagh Bridge (W114826) and Knocknagowan (W187837), May to November 1978 (Ashe, 1982). R. Flesk: d/s Clydagh/Loo confluence (W084814), Flesk Bridge (W034876), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), May to November 1978 (Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), May to November 1978 (Ashe, 1982); stream to R. Loo d/s Aughnaunas Bridge, Crohane (W048790), 15 September 1978 and 15 August 1981 (Ashe, 1982). **LAOIS: HA 15 -** R. Nore, Castletown Bridge (S326930), 27 August 1981 (Hayes, 1991; Murray, 2005). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514) and d/s Cappamore (R779504), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Erriff, Ashleigh Falls (L895645), 18 August 1981 (Hayes, 1991). R. Bunowen, Louisburg, u/s bridge (L807807) and stream at "Archeological site 9", Murrisk (L908824), 7 May 2004, DAM/WM (DAM)**: HA 33 -** R. Glenlassra, Belderg (G023407), 19 August 1983 (Hayes, 1991). Stream, Keem Bay, Achill Island (F560043), 5 August 2004 and pool, Camport, Achill Island (L677982), 29 September 2004, DAM/WM (DAM). **MEATH: HA 7 -** R. Boyne, Ardsallagh, at St Bridget's Well (N897635), 7 July 1988 (Murray, 1988). **OFFALY: HA 25 -** R. Little Brosna, New Bridge (N016088), 2 September 1982 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck, Athleague (M825758), 14 August 1981 (Hayes, 1991)**: HA 30 -** R. Dalgan, Clonfad (M518712), 20 August 1981 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy: Carrowneden (G530205), Cloonacool (G493168), Metal Bridge, Tobercurry (G464138) and Annagh (G466123), 30 August 1982 (all Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430), 19 August 1983 (Hayes, 1991). **WEXFORD: HA 11 -** R. Ounvarra, Ballycanew (T153519), 6 May 2006, DAM/WM (DAM)**: HA 12 -** R. Sow tributary, Garylough Mill, Screen (T076302) and Movilla stream, Screen (T082311), 6 May 2006, DAM/WM (DAM)**: HA 13 -** R. Tintern, Tintern Abbey (S792100), 13 June 2012 (DAM).

***Heterotanytarsus apicalis* (Kieffer, 1921)**

CAVAN: HA 36 - L. Garty, Arvagh (N278978), 12 April 2007, EPA (DAM). L. Macnean, lower, Blacklion (H106378), 14 April, 7 June and 18 September 2007, EPA (DAM)**: HA 7 -** L. Acurry, Baileborough (N584990), 5 April 2007, EPA (DAM). **CLARE: HA 25 -** L. Graney, Doorus, west shore (R556930), 4 May 2006 and Drumandora, west shore (R553938), 6 April 2009, EPA (DAM)**: HA 27 -** L. Cullaun, Corrofin, mid east shore (R317905), 5 April 2006 and

8 April 2009, EPA (DAM). L. Gortglass, south shore, Killadysert (R223596), 2 April 2009, EPA (DAM). L. Inchiquin, Corrofin, north west shore (R267899), 9 April 2009 and south east shore, (R272894), 16 June 2009, EPA (DAM). L. Rosroe, Newmarket on Fergus (R442681), 2 April 2009, EPA (DAM). L. Cullaunyheeda, Kilkishen (R484746), 16 April 2009, EPA (DAM)**: HA 28 -** L. Acrow, Lisscasey (R193687), 9 May 2005 and 3 May 2006, EPA (DAM). L. Doo, Milltown Malbay (R123721), 1 April 2009 and north west shore (R114722), 15 September 2009, EPA (DAM). L. Keagh, Milltown Malbay (R100813), 1 April and 15 September 2009, EPA (DAM). L. Lickeen, Kilfenora (R175909), 3 May and 6 June 2006, 6 April, 11 June and 15 September 2009, EPA (DAM). L. Naminna, north west shore, Boolteagh (R178710), 1 April 2009, EPA (DAM)**: HA 29 -** L. Skeardeen, Kilcorkan (R388991), 7 April 2009, EPA (DAM). **CORK: HA 19 -** L. Gouganebarra, Inchegeelagh (W009060), 7 April 1966 (Murray, 1972). L. Allua, Ballingeary (W180652), 4 April 2008, EPA (DAM)**: HA 20 -** L. Curraghalicky, Drinagh, Dunmanway (W234046), 9 April and 11 September 2008, EPA (DAM). R. Bandon: Long Bridge, Dunmanway (W242631), 25 September, 31 October and 28 November 1980; Bealabouy Bridge, Dunmanway (W257514), 31 October and 28 November 1980; u/s Ballineen (W331537), 18 April, 25 September, 31 October and 28 November 1980; Ballineen Bridge (W434538), 25 September 1980; Castle Bernard (u/s Bandon) (W472546), 20 March, 18 April, 25 September and 31 October 1980; 2.5km d/s Bandon (W516569), 31 October and 28 November 1980 (all Morgan, 1982). **DERRY: HA 1 -** pool, Creggan, Derry (C414171), 18 May 2001 (PHL)**: HA 3 -** inflow to Balinrees Reservoir, Coleraine (C793307), 20 March 1999 (PHL). L. Fea, Draperstown (H760868), 15 May 2002 (PHL). **DONEGAL: HA 1 -** L. Finn, Fintown, Glenties (B911018), 9 June and 8 September 2009, EPA (DAM). L. Mourne, Ballybofey (H069900), 8 September 2009, EPA (DAM). L. Derg, Pettigo (H074743), 21 April 2009, EPA (DAM)**: HA 36 -** L. Golagh, Ballyshannon (G965655), 21 April 2009, EPA (DAM). L. Tullynasiddagh, Ballyshannon (G983656), 7 September 2009, EPA (DAM). L. Unshin, Ballyshannon (G951637), 15 April 2009, EPA (DAM). L. Avehy, Belalt (H043664), 27 April 2002 and 28 March 2004 (PHL)**: HA 37 -** L. Eske, Donegal (G973844), 17 April 2009, EPA (DAM). L. Shinvagh, Carricode (H005675), 28 March 2004 (PHL)**: HA 38 -** R. Ray, Muckish Gap (B993268), 12 August 1982 (Hayes, 1991). L. Anure, east shore, Loughanure (B818162), 1 April 2010, EPA (DAM). L. Keel, Crolly (B848162), 1 April and 7 September 2009, EPA (DAM). L. Nasnahida, Doocharry, Dunglow (B852076), 17 June 2009, EPA (DAM). L. Greenan, Loughsalt, Kilmacrennan (C117262), 29 April 2009, EPA (DAM). L. Salt, Milford (C121256), 16 June and 8 September 2009, EPA (DAM). L. Reelan, Reelan (C131272), 6 April 2009, EPA (DAM). L. Keel, Kilmacrennan (C158243), 2 April 2009, EPA (DAM). L. Shannagh, Magheradrumman, Fanad Penninsula (C216450), 9 September 2009, EPA (DAM). L. Kiltoris, Dawros, Ardara (G675976), 30 March 2009, EPA (DAM). L.

Nabuckan, Grogan More (B850184), 10 May 2005, JRB (DAM). L. Naweelogue, GNP, Glenveagh (B974185), 5 June 1986 (Heneghan, 1986). L. Veagh, GNP: Derrylahane shore (C039231), 23 May 1986 (Heneghan, 1986); boathouse near Castle, Glenveagh (C022211), 2 June 2009, EPA (DAM); inflow stream at north east shore of L. Veagh, 250m from lake, Glenveagh (C031217), September 1989 (Hernan, 1991). L. Salt, Milford (C121256), 24 May 1986 (Heneghan, 1986)**: HA 39 -** L. Fern, Millford (C180233), 9 September 2009, EPA (DAM)**: HA 40 -** L. Fad, Coolmany (C398428), 4 April 2009, EPA (DAM). **DUBLIN: HA 9 -** Upper Reservoir, Bohernabreena, Glenasmole (O095219), 1949 (Reilly, 1951). Bog pool, Featherbed (O120190), 1974, CD (Dowling and Murray, 1981). **FERMANAGH: HA 36 -** L. Erne, Lower, Black Bay (H072639), 22 March and 27 April 2002 also 28 April 2004 (PHL). L. Keenaghan, Beleek (G974600), 28 March 2004 (PHL). **GALWAY: HA 25 -** R. Woodford, Woodford (M732000), 24 May 2003 (PHL)**: HA 29 -** L. Cutra, Gort (R485986), 24 May 2003 (PHL)**: HA 30 -** L. Corrib Upper, Oughterard (M138486), 11 April 2007, EPA (DAM). L. Corrib Lower, Moycullen (M271360), 11 April 2007, EPA (DAM). L. Lettercraffroe, Oughterard (M056376), 18 April and 5 September 2007, EPA (DAM). L. Maumwee, Maam Cross (L977485), 19 April 2007, EPA (DAM). L. Ross, Moycullen (M188365), 14 April 2007, EPA (DAM). L. Anillaun, Maam Cross (L980470), 19 April and 5 September 2007, EPA (DAM). L. Ballyquirke, Moycullen (M232317), 13 April 2007, EPA (DAM). L. Beaghcauneen, Ballinaboy (L679470), 5 April and 12 September 2007, EPA (DAM). L. Bofin, Maam Cross (M034441), 18 April and 17 September 2007, EPA (DAM). L. Adrehid, Oughterard (M055428), 25 May 2003 (PHL)**: HA 31 -** L. Anaserd, Ballyconneely (L605443), 20 April 2006 and 4 April 2007, EPA (DAM). L. Ardderry, Maam Cross (L998458), 25 May 2003 (PHL), 28 April and 17 September 2007, EPA (DAM). L. Ballynakill, Gorumna (L867236), 19 April and 15 May 2006, EPA (DAM). L. Nahasleam, Maam Cross (L972440), 6 April and 16 May 2006, 13 September 2007, EPA (DAM). L. Shindilla, Derreennacreeva, Maam Cross (L958460), 5 April 2006, 19 April and 7 June 2007, EPA (DAM). L. Aunwillan, Carraroe (L936255), 16 April and 13 September 2007, EPA (DAM). L. Ballynahinch, Ballynahinch (L777478), 6 June 2007, EPA (DAM). L. Derryclare, Recess (L825485), 17 April 2007, EPA (DAM). L. Illauntrasna, Glentrasna, Garomna (L888254), 16 April 2007, EPA (DAM). L. Loughanaure, Kilkieran (L828320), 16 April and 7 June 2007, EPA (DAM)**: HA 32 -** L. Nambrackmore, Ballinaboy-Toombeola (L716454), 5 April 2007, EPA (DAM). L. Kylemore, Letterfrack (L771582), 2 April and 5 June 2007, EPA (DAM). L. Ballynakill, Cleggan (L639581), 3 April and 5 June 2007, EPA (DAM). L. Enask, Beaghcauneen (L662468), 4 April 2007, EPA (DAM). L. Fadda, Beaghcauneen (L668455), 4 April and 11 September 2007, EPA (DAM). L. Tully, Tully Cross (L695618), 3 April 2007, EPA (DAM). L. Pollacappul, Kylemore (L754582), 2 April 2007, EPA (DAM). **KERRY: HA 21 -** L. Brin, Derreeny (V780775), 16

April and 18 June 2008, EPA (DAM). L. Cloonaghlin, Waterville (V611708), 8 May 2008, EPA (DAM). L. Currane, Waterville (V535664), 9 May and 10 September 2008, EPA (DAM). L. Inchiquin, Kenmare (V837629), 15 April and 18 June 2008, EPA (DAM). L. Namona, Waterville (V596711), 8 May 2008, EPA (DAM). Erik L., Derrygarriff (V881777), 25 April 2005, JRB (DAM). Eagles L., Knocknagantee (V674728), 25 April 2005, JRB/MC (DAM)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). L. Acoose, Slievanore, Killorglin (V755854), 24 April 2008, EPA (DAM). L. Cummernamuck, Killorglin (V745897), 16 April 2008, EPA (DAM). L. Guitane, Crohane, Killarney (W025846), 16 May 2005 and 21 April 2008, EPA (DAM). Muckross Lake, Muckross, Killarney (V950853), 24 April and 24 June 2008, EPA (DAM). Killarney, no data (V9589), 1928, FWE (Edwards, 1929). L. Kilbrean, Killarney (W005935), 8 September 1969, NH (Bracken and Murray, 1973). L. Coomloughra, Caher Mountain, Carrauntoohil (V783849), 26 April 2005, JRB/MC (DAM)**: HA 23 -** L. Cam, Castlegregory (Q597079), 29 April, 29 August and 18 September 2008, EPA (DAM). **LEITRIM: HA 26 -** L. Allen, Mountallen, Drumshanbo (G950145), 28 April 2008, EPA (DAM). L. Natire, north of L. Allen (G966340), 14 April 2005, JRB (DAM)**: HA 35 -** L. Annary, Dromahair (G817338), 1 April 2008, EPA (DAM). L. Belhavel, Killarga, Dromahair (G878288), 2 April 2008, EPA (DAM). L. Glencar, Glencar (G748434), 1 April 2008, EPA (DAM). L. Lackagh, Boleybrack (G920320), 21 April 2005, JRB (DAM). L. Nabrack, Crocknagapple (G860477), 29 April and 4 August 2005, JRB/MC (DAM). L. Sandy, Crocknagapple (G891448), 28 April and 4 August 2005, JRB/MC (Murray, 2005)**: HA 36 -** L. Drumlaheen, Feenagh, Ballinamore (H091071), 11 April 2007, EPA (DAM). **MAYO: HA 30 -** L. Aille, Aille, Westport (M071807), 22 April 2008, EPA (DAM)**: HA 30 -** L. Mask, west shore, Toormakeady (M097647), 14 April 2008, EPA (DAM)**: HA 32 -** R. Owenwee, Belclare Bridge, Westport (L959822), 7 May 2004, DAM/WM (DAM). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). L. Feeagh, Newport (L975983), 11 April 2008, EPA (DAM). L. Doo, Delphi: south east shore (L844677), 25 June 2008; west shore (L835681), 5 April and 9 May 2006, 3 April 2008, EPA (DAM). L. Glencullin, Delphi: north west shore, (L815699), 26 June 2008; south west shore, (L819696), 25 August 2008 and north shore (L818711), 22 September 2008, all EPA (DAM). L. Fin, Delphi (L841657), 5 April and 9 May 2006, EPA (DAM)**: HA 33 -** bog pools, Glenamoy (F896345), January and April to June 1973, CD (Dowling, 1975; Dowling and Murray, 1981). L. Acorrymore, Achill Island (F578057), 5 August and 29 September 2004, DAM/WM (Murray, 2005) also 16 June and 17 September 2008, EPA (DAM). L. Bunacurry, Achill Island (F695048), 29 September 2004, DAM/WM (DAM). Pool, Camport, Achill Island (L677982), 29 September 2004, DAM/WM (DAM). L. Keel, north shore, Achill Island (F650058), 7 April 2008, EPA (DAM)**: HA 34 -** L. Conn: Brackwansha (G191098), September 1966, AJOS (Murray, 1972) and 18 June 2008,

EPA (DAM); Crossmolina, north west shore (G165144), 15 April 2008, EPA (DAM). L. More, Ballynagoraher (G115044), 4 April and 8 May 2006, EPA (DAM). L. Levally, Massbrook (G146043), 22 April, 25 June and 23 September 2008, EPA (DAM). L. Alone, Ox Mountains (G367157), 22 April and 5 August 2005, JRB/MC (DAM)**: Clare Island -** R. Dorree, 100m above sea, Maum (L708865), 28 April 2000, DAM/WM (Murray and Murray, 2003). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627), 16 July 1981 (Hayes, 1991). L. Urlar, north east shore (Abbey) (M508900), 10 March 2005, DAM/WM (DAM). L. Ree, Yew Point, Barley Harbour (N018485), 25 April and 11 September 2007, EPA (DAM). Cavetown L., Boyle (M832974), 9 April 2008, EPA (DAM). L. O'Flynn, Ballinlough (M585786), 9 April 2008, EPA (DAM). L. Meelagh, Keadew (G901117), 15 April 2008, EPA (DAM). L. Key, Boyle (G838057), 14 April 2008, EPA (DAM)**: HA 34 -** R. Owenlobnaglaur tributary, north west of Ballaghaderreen (G616002), 22 April 2004, JRB (DAM). **SLIGO: HA 26 -** L. Gara: Cuppanagh, Cloonlough (G714013), 30 September 2008 and Monastredan (M708996), 28 April 2008, EPA (DAM)**: HA 34 -** L. Talt, Gleneask (G402151), 10 April and 24 September 2008, EPA (DAM)**: HA 35 -** L. Easky, Ox Mountain (G446230), 10 April and 25 September 2008, EPA (DAM). Templehouse L., Ballymote (G615171), 30 April 2008, EPA (DAM). L. Arrow, Ballinafad (G789123), 29 April 2008, EPA (DAM). L. Gill, Sligo (G753335), 3 April 2008, EPA (DAM). **TYRONE: HA 1 -** Oak L., Gortin, Newtownstewart (H498843), 16 August 2011 (PHL). **WESTMEATH: HA 26 -** L. Killinure, Wineport (N067458), 24 April and 26 June 2007, EPA (DAM); L. Killinure, Ballaghkeernan Bay (N069445), 24 April 2007, EPA (DAM). **WICKLOW: HA 10 -** R. Glenealo, Glendalough (T090962) and outflow from Upper Glendalough Lake, Laragh, WMNP (T109964), 16 July 1996, EMcE/DAM (McEntee, 1997). Upper Glendalough Lake, Laragh, WMNP (T100960), 3 April and 29 July 2009, EPA (DAM). L. Bray Lower, Glencree (O140163), 2 April 2009, EPA (DAM). L. Tay, Luggala (O163008), 31 March, 16 June and 2 September 2009, EPA (DAM). Vartry Reservoir, Roundwood, north basin (O205050), 6 April 2009, EPA (DAM).

***Heterotanytarsus* sp. sensu Ashe, 1982**

HA 22: - R. Clydagh, u/s Clydagh Bridge (W114826), March to November 1978 (Ashe, 1982). R. Flesk, d/s Clydagh/Loo confluence (W084814), d/s Whitebridge (V987900) and d/s New Bridge (V963885), March to November 1978 (Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), March to November 1978 (Ashe, 1982).

***Heterotrissocladius grimshawi* (Edwards, 1929)**

CLARE: HA 25 - L. Graney, Doorus, west shore (R556930), 10 April 2006, EPA (DAM)**: HA 28 -** L. Doo, Milltown Malbay (R123721), 1 April 2009, EPA (DAM). L. Keagh, Milltown

Malbay, north shore, (R100813), 15 September 2009, EPA (DAM). **CORK: HA 20 -** L. Curraghalicky, Drinagh, Dunmanway (W234046), 9 April 2008, EPA (DAM)**: HA 21 -** L. Bofinna, Bantry (W041488), 8 April 2008, EPA (DAM). **DONEGAL: HA 1 -** L. Mourne, Ballybofey (H069900), 8 September 2009, EPA (DAM)**: HA 37 -** L. Eske, Donegal (G973844), 17 April 2009, EPA (DAM)**: HA 38 -** L. Anure, east shore, Loughanure (B818162), 1 April 2010, EPA (DAM). L. Keel, Crolly (B848162), 7 September 2009, EPA (DAM). L. Nasnahida, Doocharry, Dunglow (B852076), 7 April, 6 August and 10 September 2009, EPA (DAM). L. Veagh, GNP, near Castle, Glenveagh (C022211), 21 August 1985 (Heneghan, 1986) and 2 June 2009, EPA (DAM). L. An tSeisigh, Portnablagh (Sheephaven) (C043361), 1 April 2009, EPA (DAM). L. Glen, Glen (C105292), 29 July 2009, EPA (DAM). L. Salt, Milford (C121256), 16 June, 15 July and 8 September 2009, EPA (DAM). L. Reelan, Reelan (C131272), 6 April 2009, EPA (DAM). L. Keel, Kilmacrennan (C158243), 2 April 2009, EPA (DAM). L. Fallaneas, Kindrum (C173424), 30 April 2009, EPA (DAM)**: HA 39 -** L. Akibbon, Church Hill (C068184), 9 September 2009, EPA (DAM)**: HA 40 -** L. Fad, Coolmany (C398428), 4 April 2009, EPA (DAM). **DUBLIN: HA 9 -** Upper Reservoir, Bohernabreena, Glenasmole (O095219), 20 May 1947, CFH (DAM). **GALWAY: HA 30 -** L. Corrib Upper, Oughterard (M138486), 11 April 2007, EPA (DAM)**: HA 30 -** L. Maumwee, Maam Cross (L977485) and L. Anillaun, Maam Cross (L980470), 19 April 2007, EPA (DAM). L. Bofin, Maam Cross (M034441), 31 July 2007, EPA (DAM)**: HA 31 -** R. Owentouey, Tullywee Bridge, Recess (L873474), 18 August 1981, (Hayes, 1991; Murray, 2005). L. Nahasleam, Maam Cross (L972440), 6 April and 12 September 2006 also 13 September 2007, EPA (DAM). L. Shindilla, Derreennacreeva, Maam Cross (L958460), 12 September 2006, EPA (DAM). L. Derryclare, Recess (L825485), 16 July and 13 September 2007, EPA (DAM)**: HA 32 -** L. Kylemore, Letterfrack (L771582), 30 July 2007, EPA (DAM). L. Pollacappul, Kylemore (L754582), 2 April 2007, EPA (DAM). **KERRY: HA 21 -** L. Currane, Waterville (V535664), 9 May 2008, EPA (DAM). L. Inchiquin, Kenmare (V837629), 17 September 2008, EPA (DAM)**: HA 22 -** Killarney, no data (V9589), 1928 (Edwards, 1929). L. Guitane, Crohane, Killarney (W025846), 16 May 2005 also 21 April and 9 September 2008, EPA (DAM). L. Leane, Killarney (V931886), 22 April 2008, EPA (DAM). Muckross Lake, Killarney (V950853), 24 April 2008, EPA (DAM). L. Coomloughra, Caher Mountain, Carrauntoohil (V783849), 26 April 2005, JRB/MC (DAM)**: HA 23 -** L. Cam, Castlegregory (Q597079), 29 April, 25 June, 29 August and 18 September 2008, EPA (DAM). **LEITRIM: HA 35 -** L. Annary, Dromahair (G817338) and L. Glencar, Glencar (G748434), 1 April 2008, EPA (DAM). L. Lackagh, Boleybrack (G920320), 21 April 2005, JRB (DAM). L. Nabrack, Crocknagapple (G860477), 29 April 2005, JRB (DAM). **MAYO: HA 30 -** L. Mask, west shore, Toormakeady (M097647), 14 April 2008, EPA (DAM)**: HA 32 -** L. Doo, Delphi: north east shore (L834689), 6 June 2002, DAM/WM

(DAM) and 22 September 2008 EPA (DAM); west shore (L835681), 12 July 2006, EPA (DAM) and west shore (L833680), 25 August 2008, EPA (DAM). L. Fin, Delphi (L841657), 5 April 2006, EPA (DAM). L. Moher, Liscarney, Westport (L977766), 21 April 2008, EPA (DAM). R. Owenwee, Belclare Bridge, Westport (L959822) and Westport L., Westport Woods Hotel (L985843), 7 May 2004, DAM/WM (DAM)**: HA 33 -** L. Acorrymore, Achill Island (F578057), 7 April, 16 July and 17 September 2008, EPA (DAM)**: HA 34 -** L. Conn, Crossmolina, north west shore (G165144), 15 April 2008, EPA (DAM). **ROSCOMMON: HA 26 -** L. Ree, Yew Point, Barley Harbour (N018485), 25 April 2007, EPA (DAM). L. O'Flynn, south east shore, Ballinlough (M585786), 9 April 2008, EPA (DAM). L. Meelagh, Keadew (G901117), 15 April 2008, EPA (DAM). **SLIGO: HA 34 -** L. Talt, Gleneask (G402151), 10 April 2008, EPA (DAM)**: HA 35 -** L. Easky, Ox Mountain (G446230), 10 April and 25 September 2008, EPA (DAM). L. Templehouse, Ballymote (G615171), 30 April 2008, EPA (DAM). L. Arrow, Ballinafad (G789123), 29 April 2008, EPA (DAM). **TIPPERARY: HA 18 -** L. Curra, Galtymore Mountain (R867242), 10 August 2005, JRB (DAM). **WICKLOW: HA 10 -** R. Glenealo, Glendalough (T090962), 16 July 1996, EMcE/DAM (McEntee, 1997). L. Dan, Roundwood (O157035), 2 September 2009, EPA (DAM). L. Tay, Luggala (O163008), 2 September 2009, EPA (DAM). L. Ouler, Tonelagee (O091023), 19 May and 8 August 2005, JRB (Murray, 2005)**: HA 9 -** Pollaphuca Reservoir, Ballymore Eustace (N995080), 30 April and 3 September 2009, EPA (DAM).

***Heterotrissocladius marcidus* (Walker, 1856)**

ANTRIM: HA 3 - Killylane Reservoir, Magherabane, Larne (J292985), 8 May 1999 (PHL)**: HA 5 -** Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **CORK: HA 19 -** L. Gouganebarra, Inchegeelagh (W009060), 26 September 1966 and 1 October 1968 (Murray, 1972)**: HA 20 -** R. Bandon: Long Bridge, Dunmanway (W242631), 25 September 1980; Bealabouy Bridge, Dunmanway (W257514), 18 April 1980; u/s Ballineen (W331537), 18 April 1980; Ballineen Bridge (W434538), 18 April and 25 September 1980; R. Bandon, Castle Bernard (u/s Bandon) (W472546), 18 April and 25 September 1980; 2.5km d/s Bandon (W516569), 18 April, 31 October and 28 November 1980 (all Morgan, 1982). **DERRY: HA 1 -** Upper Creggan Reservoir, Creggan, Derry (C417173), 26 April and 10 May 2001 (PHL); pool, Creggan, Derry (C414171), 17 May 2002 (PHL); Lower Creggan Reservoir, Creggan, Derry (C422174), 26 April 2001; inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 26 April and 10 May 2001 (PHL)**: HA 2 -** Binevenagh pond, Coleraine (C691305), 18 May 2000 (Langton, 2002); fire dam 1 Binevenagh Forest, Coleraine (C699304) and fire dam 2 Binevenagh Forest, Coleraine (C704314), 18 May 2000 (Langton, 2002)**: HA 3 -** Howell's Tarn, Ballywildrick, Coleraine (C766325), 7 April and 21 April 2002 (PHL). R. Bann,

Coleraine (C854304), 6 April 2000, 27 April 2001, 11 April and 18 April 2010 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 7 May 2001 (PHL). **DONEGAL: HA 36 -** L. Unshin, Ballyshannon (G946634), 28 March 2004 (PHL). L. Avehy, Belalt (H043664), 28 March 2004 (PHL)**: HA 37 -** L. Shinvagh, Carricode (H005675), 27 April 2002 (PHL)**: HA 38 -** stream near Administration Centre, GNP, Glenveagh (C041227), 14 May 1986 (Heneghan, 1986)**: HA 39 -** L. Gartan, Church Hill, north shore (C065173), 18 July 2000 (Langton, 2002). **DOWN: HA 3 -** R. Shanky, left fork, Hilltown (J221243) and R. Shanky, Batts Bridge, Hilltown (J226257), 26 September 1997 (PHL). **FERMANAGH: HA 36 -** L. Erne, Lower, Black Bay (H072639), 27 April 2002 and 28 March 2004 (PHL). R. Colebrook, Tattenbuddagh Bridge, Brookeborough (H458428), 3 October 1997 (PHL). **GALWAY: HA 25 -** R. Woodford, Woodford (M732000), 24 May 2003 (PHL)**: HA 30 -** L. Corrib (M1545), 1980, BC (DAM). L. Anillaun, Maam Cross (L980470), 19 April 2007, EPA (DAM). Stream at N59 picnic site, Moycullen (M204326), 25 May 2003 (PHL)**: HA 31 -** R. Owentouey, Tullywee Bridge, Recess (L873474), 18 August 1981 (Hayes, 1991). **KERRY: HA 22 -** Killarney, (V9589), 1928, FWE (Edwards, 1929). R. Clydagh, u/s Clydagh Bridge (W114826) and Knocknagowan (W187837), April, June and September to November 1978 (Ashe, 1982). R. Flesk, d/s Clydagh/Loo confluence (W084814), Flesk Bridge (W034876) and d/s Whitebridge (V987900), April, June and September to November 1978 (Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), April, June and September to November 1978 (Ashe, 1982). **MAYO: HA 32 -** L. Doo, Delphi, west shore (L835681), 12 July 2006, EPA (DAM)**: Clare Island -** pond east of Maum road (L710863), 28 April 2000 (Murray and Murray, 2003; Murray, 2005). **MEATH: HA 8 -** stream-pond area, Meadesbrook, Kilmoon (O038594), 26 April 2006 (DAM). **SLIGO: HA 34 -** R. Moy, Carrowneden (G530205), 30 August 1982 (Hayes, 1991; Murray, 2005).

***Hydrosmittia oxoniana* (Edwards, 1922)**

CLARE: HA 28 - L. Acrow, Lisscasey (R193687), 4 April 2006, EPA (DAM). **DONEGAL:** GNP, track to L. Inshagh, Glenveagh (C035210), 13 May 1986 (Heneghan, 1986 - sub *Pseudosmittia recta* Edwards; Murray, 1996 - sub *Pseudosmittia oxoniana*). **GALWAY: HA 31 -** L. Arderry, Maam Cross (L982458), 7 June 2007, EPA (DAM). L. Derryclare, Recess (L825485), 6 June 2007, EPA (DAM). **LEITRIM: HA 35 -** L. Belhavel, Killarga, Dromahair (G878288), 2 April 2008, EPA (DAM). **MAYO: HA 32 -** L. Doo (Delphi), north east shore (L834689), 22 August 2002, DAM/WM (DAM). R. Bunowen, Louisburg, u/s of bridge (L807807), 30 September 2004, DAM/WM (DAM)**: HA 33 -** L. Acorrymoree, Achill Island (F578057) and Bunacorry Lake, Achill Island (F695048), 29 September 2004, DAM/WM (DAM).

***Krenosmittia camptophleps* (Edwards, 1929)**

CORK: HA 20 - R. Ovane, Pierson's Bridge (W023454), 24 August 1983 (Hayes, 1991). **DONEGAL: HA 38 -** R. Owenveagh, Glenbeagh Cottage, GNP, Glenveagh (B990178), 30 July 1985 and L. Veagh, Derrylahane, GNP, Glenveagh (C039231), 24 July 1985, LJH (Heneghan, 1986). **FERMANAGH: HA 36 -** R. Sruh Croppa, Cuilcagh Mountain (H111329), 29 June 2000 (Langton, 2002). **GALWAY: HA 30 -** R. Loughkip, Ballyquirk, Moycullen (M224313), 17 August 1981 (Hayes, 1991). **KERRY: HA 21 -** R. Inny, Scarriff Bridge (V504696), 24 August 1983 (Hayes, 1991). L. Brin, Derreeny (V780775), 10 September 2008, EPA (DAM)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). Muckross Lake, Muckross, Killarney (V950853), 24 June 2008, EPA (DAM). R. Clydagh, u/s Clydagh Bridge (W114826), 10 August 1978 (Ashe, 1982). R. Flesk, d/s Clydagh/Loo confluence (W084814) and d/s Whitebridge (V987900), May to August 1978 (Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), May to August 1978 (Ashe, 1982). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514) and d/s Cappamore (R779504), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** L. Doo, Delphi: north east shore (L834689), 6 June and 22 August 2002, DAM/WM (Murray, 2005); north east shore (L834686), 22 September 2008, EPA (DAM) and south east shore (L844677), 25 June 2008, EPA (DAM). L. Fin, Delphi (L841657), 28 June and 12 July 2006, EPA (DAM). R. Carrowinsky, Glenkeen Road Bridge, Carrowinskey (L818724), 9 May 2003, DAM/WM (Murray, 2005). R. Bunowen, Louisburg, u/s bridge (L807807), 7 May 2004, DAM/WM (DAM). **TYRONE: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WICKLOW: HA 10 -** R. Avonbeg, Glenmalure, Drumgoft Bridge (T105905), 4 August 1983 (Hayes, 1991)**: HA 12 -** R. Slaney, Knockgarrigan, Glen of Imail (S936937), 28 July 1981 (Hayes, 1991).

***Limnophyes angelicae* Sæther, 1990**

DERRY: HA 3 - R. Bann, Coleraine (C855304), 7 April 2000 (Langton, 2004) and 10 August 2012 (PHL). **MAYO: Clare Island -** Creggan L., Lecarrow (L689857), 21 August 2002 (Murray and Murray, 2003; Murray, 2005), July to October 1998 and June to October 1999 (Fahy, 2002).

***Limnophyes asquamatus* Andersen, 1937**

DERRY: HA 3 - Mountsandel Wood, Coleraine (C862303), 19 February 2000 (PHL). R. Bann, Coleraine (C855304), 11 April 2010 (PHL). **DONEGAL: HA 37 -** Carn L., Blue Stack Mountains (G871886), 10 May 2005, JRB/MC (Murray, 2005). **MAYO: HA 32 -** L. Doo, Delphi, north east shore (L834689), 22 August 2002, DAM/WM (Murray, 2005). **TIPPERARY: HA 18 -** Black L., Arra Mountains (R738771), 10 August 2005, JRB (DAM).

***Limnophyes difficilis* Brundin, 1947**
DERRY: HA 3 - R. Agivey, Garvagh (C838154), 21 July 2002, SMcB (Langton, 2004).

***Limnophyes edwardsi* Sæther, 1990**
DERRY: HA 3 - R. Bann, Coleraine (C855304), 26 April 1999, 8 October 2000 and 16 June 2001 (PHL). **DONEGAL: HA 38 -** tributary stream to R. Owenveagh, Glenbeagh Cottage, GNP, Glenveagh (B998175), 4 June 1986 (Heneghan, 1986)**: HA 38 -** R. Calabber, Glenveagh (C035241), 28 May 1986, LJH (DAM). **LEITRIM: HA 26 -** L. Allen, Drumshanbo Lock (G968110), 30 March 2000 (Murray, 2005). **WICKLOW: HA 10 -** L. Ouler, Tonelagee (O091023), 19 May 2005, JRB (DAM).

***Limnophyes gurgicola* (Edwards, 1929)**
DERRY: HA 3 - R. Bann, Coleraine (C855304), 12 April 1999 (PHL). **DONEGAL: HA 38 -** Glenlack Stream, near L. Veagh, GNP, Glenveagh (C003183), 15 May 1986 (Heneghan, 1986). **DUBLIN: HA 9 -** R. Dodder: Fort Bridge, Bohernabreena (O009242), 31 May 1967 and Clonskeagh Bridge (O174306), 2 February 1967 (Murray, 1972). **KERRY: HA 22 -** R. Caragh: Lower Brida Valley (V740805) and Bealalaw Bridge (V715832), 1975, CD (Dowling *et al.*, 1981). R. Torc, Torc Mountain, Killarney (V959830), March 1972, DJD/DAM (Douglas and Murray, 1980). **MAYO: HA 33 -** bog pools, Glenamoy (F896345), June and August 1973, CD (Dowling, 1975; Dowling and Murray, 1981)**: Clare Island -** roadside between Maum and Capnagower (L712857), 20 August 2002 and roadside at Bayview Hotel (L716856), 28 April 2000 (Murray and Murray, 2003; Murray, 2005). **WEXFORD: HA 13 -** R. Tintern, Tintern Abbey (S792100), 13 June 2012 (DAM). **WICKLOW: HA 10 -** R. Glenmacnass, Laragh (O115028), 19 August 1966 (Murray, 1972).

***Limnophyes habilis* (Walker, 1856)**
DERRY: HA 3 - McFadyen's Garden, Coleraine (C848316), 13 April 2003 (PHL). **DONEGAL: HA 38 -** L. Veagh, GNP, Derrylahane, Glenveagh (C039231), 24 July 1985 (Heneghan, 1986). **DUBLIN: HA 9 -** Royal Canal, Ashtown (O108378), 15 July 1968 (Murray, 1972). Howth Head Park, Howth (O279380), 17-20 February 1984, 21 and 29 March 1984, 19 May 1984, KB (Bond *et al.* 1988, PJA/NMI). **MAYO: Clare Island -** Creggan L., Lecarrow (L689857), 11 June 1998 (Fahy, 2002/NMI). **MEATH: HA 8 -** stream-pond area, Meadesbrook, Kilmoon (O038594), 30 January 1999 (Murray, 2005).

***Limnophyes minimus* (Meigen, 1818)**
ANTRIM: HA 3 - L. Neagh, Antrim Bay (J135866), 4 May 1999 (PHL). **CAVAN: HA 7 -** L.

Ramor, Virginia (N603871), May 1971, DJD/DAM (Douglas, 1971). **DERRY: HA 3 -** L. Neagh (H9080), no date (McLarnon and Carter, 2000). Downhill Lake, Downhill Forest, Coleraine (C757354), 24 March 2002 (PHL). Bishops Gate Garden, Coleraine (C762355), 18 March 2006 (PHL). Pond, near R. Macquosin, Ballytinagh Road, Coleraine (C854255), 16 May 2004 (PHL). R. Bann, Coleraine (C855304), 19 January 1999, 24 March 2004, 1 and 6 January 2006 (PHL). **DONEGAL: HA 38 -** R. Owenveagh, Glenbeagh Cottage, GNP, Glenveagh (B990178), 27 July 1985 and L. Veagh shoreline, Derrylahane, Glenveagh (C039230), 16 August 1985 (Heneghan, 1986)**: HA 39 -** L. Inshagh, GNP, Glenveagh (C031188), 13 May 1986 (Heneghan, 1986). **DUBLIN: HA 9 -** bog pool, Featherbed (O120190), April to August 1974, CD (Dowling, 1975; Dowling and Murray, 1981). R. Dodder, Bohernabreena aqueduct (O101208), 10 June 1968 and Clonskeagh Bridge (O174306), 23 July 1968 (Murray, 1972). **GALWAY: HA 29 -** L. Cutra, Gort (R485986), 24 May 2003 (PHL): **HA 32** - Kylemore Road, Letterfrack (L745582), 19 September 1986 (Heneghan, 1987). **KERRY: HA 22 -** R. Caragh: Upper Brida Valley (V785810), Lower Brida Valley (V740805) and Bealalaw Bridge (V715832), 1975, CD (Dowling *et al.*, 1981). L. Leane, Killarney, Castlelough Bay (V975873), 27 April 1973 (Douglas and Murray, 1980). **LEITRIM: HA 35 -** L. Lackagh, Boleybrack (G920320), 21 April 2005, JRB (DAM). **LOUTH: HA 6 -** Tinure Marsh, Collon (O020835), 14 May 1985, BH (DAM). **MAYO: HA 32 -**. Knappagh, Westport (L9880), July 1911 (Grimshaw, 1912)**: HA 33 -** bog pools, Glenamoy (F896345), January, February, April, May, July, August, November, December 1973, CD (Dowling, 1975; Dowling and Murray, 1981)**: Clare Island -** roadside at Bayview Hotel (L716856), 28 April 2000 and seacoast at Bayview Hotel (L717857), 20 August 2002 (Murray and Murray, 2003; Murray, 2005). **MEATH: HA 7 -** R. Boyne, Bellinter Bridge (N894625), 18 August 1968 (Murray, 1972)**: HA 8 -** emerged from yard bucket, Meadesbrook, Kilmoon (O040594), 2 January 2013 (DAM); stream-pond area, Meadesbrook, Kilmoon (O038594), 7 May 2005 (DAM).

***Limnophyes natalensis* (Kieffer, 1914)**

CORK: Blasket Island - Inish Tearaght (V198950), 10 May 1975, G. A. Walton (Sæther, 1990). **DERRY: HA 3 -** Garvagh House, wood, Garvagh (C837154), 21 July 2002 (PHL). McFadyen's Garden, Coleraine (C848316), 14 April 2002 (PHL). Island Equestrian Centre, Coleraine (C873327), 28 February 2000 (PHL). Pond, near R. Macquosin, Ballytinagh Road, Coleraine (C854255), 18 April 2004 (PHL). R. Bann, Coleraine (C854304), 4 July 1999, 3 May, 24 June and 3 July 2000, 27 March 2002 and 28 September 2012 (PHL). **DONEGAL: HA 37 -** Carn L., Blue Stack Mountains (G871886), 27 July 2005, JRB (DAM)**: HA 38 -** L. Nabuckan, Grogan More (B850184), 27 July 2005, JRB (DAM). **KERRY: HA 22 -** L. Nakirka, R. Caragh catchment (V735896), 3 September 1979, PSC (Sæther, 1990). **LEITRIM: HA 26 -** L. Natire

(G966340), 3 August 2005, JRB/MC (Murray, 2005). **MAYO: HA 34 -** L. Alone, Ox Mountains (G367157), 22 April 2005, JRB (DAM)**: Clare Island -** seepage at Ballytouhy (L696882), 20 August 2002 (Murray and Murray, 2003; Murray, 2005). Roadside between Maum and Capnagower (L712857), 4 June 2002 (Murray and Murray, 2003). L. Leinapollbauty, Lecarrow (L691856), 5 June 2002, seepage south of lighthouse (L695879), 20 August 2002 (Murray and Murray, 2003).

***Limnophyes ninae* Sæther, 1975**

DERRY: HA 3 - R. Bann, Coleraine (C855304), 10 June 1999 and 30 June 2001 (Langton, 2004).

***Limnophyes pentaplastus* (Kieffer, 1921)**

CAVAN: HA 7 - L. Mullagh, Mullagh (N680856), 23 May 1968 (Murray, 1972). **DERRY: HA 1 -** Upper Creggan Reservoir, Creggan, Derry (C417173), 23 March 2001 and inflow to Upper Creggan Reservoir (C413171), 18 May 2001 (PHL)**: HA 3 -** L. Neagh (H9080), no data (McLarnon and Carter, 2000). Downhill Lake, Downhill Forest, Coleraine (C757354), 17 March 2000 (PHL). R. Bann, Coleraine (C854304), 10 April and 8 October 2000 also 6 February 2001 (PHL). **DONEGAL: HA 39 -** stream, Ranny House, Carrokeel (C208322), 2 June 2000 (Langton, 2002). **DUBLIN: HA 9 -** R. Dodder, headwaters, Maureen's Brook, Featherbed (O128175), 1 December 1966 (Murray, 1972). **LEITRIM: HA 35 -** L. Glencar, Glencar (G757435), 2 September 2008, EPA (DAM). **MAYO: HA 32 -** R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972)**: Clare Island -** roadside between Maum and Capnagower (L712857), 4 June 2002 and R. Doree, Lecarrow (L698867), 5 June 2002 (Murray and Murray, 2003). **MEATH: HA 7 -** bog ditch, Ballivor (N659548), 6 April 1984 (DAM)**: HA 8 -** R. Nanny, road bridge u/s Duleek (O035655), 6 June 2006, DAM/WM (DAM). Stream-pond area, Meadesbrook, Kilmoon (O038594), 24 April 1973 (DAM). **MONAGHAN: HA 36 -** L. Inner, Dartery, Drum (H625173), 6 June 2007, EPA (DAM). **WICKLOW: HA 10 -** outflow from Upper Glendalough Lake, Laragh, WMNP (T109964), 16 July 1996, EMcE/DAM (McEntee, 1997).

***Limnophyes platystylus* Murray, 2006**

MEATH: HA 8 - stream-pond area, Meadesbrook, Kilmoon (O038594) [type locality], 5 May 2005, DAM/WM (Murray, 2005, 2007), 7 May 2005 (DAM) and 8 November 2005 (Murray, 2007) [Holotype NMI 2006: 60].

***Limnophyes pumilio* (Holmgren, 1869)**

CLARE: HA 27 - L. Cullaun, Corrofin, mid east shore (R317905), 5 September 2006, EPA (EPA). **DERRY: HA 3 -** L. Neagh (H9080), no data (McLarnon and Carter, 2000). R. Bann, Coleraine (C854304), 1 November 2000 and 7 September 2012 (PHL). **DONEGAL: HA 38 -** stream to R. Owenveagh, Glenbeagh Cottage, GNP, Glenveagh (B998175), 4 June 1986 (Heneghan, 1986)**: HA 39 -** L. Inshagh, Glenveagh (C031188), 20 May 1986 (Heneghan, 1986). L. Nambraddan, Glenveagh (C022193), 31 July 1985 (DAM), cited in Heneghan (1986) as *Krenosmittia* sp. indet. **KERRY: HA 22 -** L. Leane, Killarney, Muckross Boathouse (V965866), 6 September 1987, NOM (LJH)**: HA 23 -** L. Cam, Castlegregory (Q597079), 29 April 2008, EPA (DAM). **LEITRIM**: **HA 35 -** L. Nabrack, Crocknagapple (G860477), 29 April 2005, JRB (DAM). L. Sandy, Crocknagapple (G891448), 28 April 2005, JRB/MC (DAM). **MAYO: HA 33 -** L. Acorrymore, Achill Island (F578057) and L. Bunacurry, Achill Island (F695048), 29 September 2004, DAM/WM (DAM). L. Carrowmore, Gortmore, Bangor Erris (F833266), 9 April 2002, DAM/WM (DAM).

***Limnophyes spinigus* Sæther, 1990**

CLARE: HA 27 - L. Bunny, Aughrim (R377965), 6 April 2006, EPA (EPA). L. Cullaun, Corrofin, mid east shore (R317905), 5 April and 7 June 2006, EPA (EPA). **FERMANAGH: HA 36 -** L. Erne Upper, slipway (H362242) and L. Erne, Lower, Boa Island (H108626), 27 April 2002 (Langton and Ruse, 2005).

***Mesosmittia flexuella* (Edwards, 1929)**

DONEGAL: HA 38 - Administration Centre, GNP, Glenveagh (C041228), 14 July 1985, LJH (Heneghan, 1986; Heneghan and Murray, 1987; Murray, 2005). **GALWAY: HA 30 -** L. Corrib, no data (M1545), 1980, BC (DAM).

***Metriocnemus* (*Inermipupa*) *carmencitabertarum* Langton and Cobo, 1997**

DERRY: HA 3 - Lodge Burn, Coleraine (C8530), 30 December 2013 (PHL). **DUBLIN: HA 9** – rain-filled exposed small tank on roof of Science Centre, Belfield, UCD, (O182301), 7 August 2013 (Murray, 2013). **MEATH: HA 7 -** rainwater accumulation in milk churn, Riverstown, Kilmessan (N892595), 27 March 2012 (Murray, 2012) and 15 August 2013 (Murray, 2013). Rainwater accumulation in a kayak, Ardsallagh, Navan (N896635), 17 November 2012 (Murray, 2013). Rainwater accumulation in discarded motor tyres and plastic vessels at Mullaghboy Industrial Estate, Navan: a) The Zone Activity Centre (N853668), 18 June, 25 August, 8 September, 20 and 24 October 2012 (Murray, 2012) and 2 May 2013 (Murray, 2013); b) Huckleberry's Den, (N857668) 2 May 2013. Rainwater in small basin, Ballinter (N890626),

18 June and 18 October 2012 (Murray, 2013)**: HA 8 -** bucket in yard, Meadesbrook, Kilmoon, Ashbourne (O040594), 28 June and 17 September to 14 November 2012 (Murray, 2012) also 13 and 27 April, 3 May, 15 July, 23 June, 6 and 15 August, 21 September and 27 October 2013 (Murray, 2013). **WICKLOW: HA 10** – bird-bath in Garden, Hillside, Greystones (O291122), 4, 15, 21 June and 3 July 2013 (Murray, 2013)

***Metriocnemus* (*Metriocnemus*) *albolineatus* (Meigen, 1818)**
DERRY: HA 3 - R. Bann, Coleraine (C854304), 20 August 2002 and 9 November 2012 (PHL). **DUBLIN: HA 9 -** R. Dodder, Firhouse (O104274), 12 August 1968 and Clonskeagh Bridge (O174306), 23 July 1968, DAM (Murray, 1972). **GALWAY: HA 32 -** pond, Diamond Hill, CNP, Letterfrack (L727568), 18 September 1986 (Heneghan, 1987).

***Metriocnemus* (*Metriocnemus*) *alisonae* Langton, 2013**
DERRY: HA 3 - R. Bann, Coleraine (C854305), and at window, Kylebeg Avenue (C858304) 22 February 2013 (Langton, 2013).

***Metriocnemus* (*Metriocnemus*) *atriclava* Kieffer, 1921**
CAVAN: HA 7 - R. Barora tributary, Relaghbeg (N679907), 5 April 1968 and L. Mullagh, Mullagh (N680856), 23 May 1968 (Murray, 1972). **GALWAY: HA 32 -** stream, near Park Administration Centre, CNP, Letterfrack (L717572), 18 September 1986 and roadside on Kylemore Road, Letterfrack (L745582), 19 September 1986 (Heneghan, 1987). **OFFALY: HA 25 -** bog lake, Turraun (N172185), June 1998 (DAM)

***Metriocnemus* (*Metriocnemus*) *beringensis* (Cranston and Oliver, 1988)**
DONEGAL: HA 38 - Misty L., GNP, Glenveagh (C014228), 3 April 1986 and R. Calabber, Glenveagh (C035241), 28 May 1986, LJH (Heneghan, 1987; Murray, 1996). **TIPPERARY: HA 18 -** Black L., Arra Mountains (R738771), 10 August 2005, JRB (DAM)

***Metriocnemus* (*Metriocnemus*) *cavicola* Kieffer, 1921**
DERRY: HA 3 - R. Bann, Coleraine (C854304), 31 July 2011 (PHL). **WATERFORD: HA 17 -** Belle Lake, Dunmore East (S665049), 13 August 1990 and 10 June 1996, JPOC (O'Connor and Ashe, 1997). **WESTMEATH: HA 25 -** L. Ennell, Inchacrone (N415466), 20 May 2006, JPOC (O'Connor and Ashe, 2006).

***Metriocnemus* (*Metriocnemus*) *eurynotus* (Holmgren, 1883)**
ANTRIM: HA 3 - L. Neagh, Antrim Bay (J135866), 4 May 1999 (PHL)**: HA 4 -** inlet stream,

L. na Cranagh, Fair Head (D183427), 21 March 1999 (PHL). **DERRY: HA 1 -** Lower Creggan Reservoir, Derry (C422174), 21 February and 26 April 2001 (PHL); inflow to Upper Creggan Reservoir, Derry (C413171), 10 May 2001 (PHL)**: HA 2 -** R. Curly, Artikelly Bridge, Limavady (C684247) and burn at Largantea picnic area, Formoyle, Coleraine (C738287), 9 June 2000 (Langton, 2002)**: HA 3 -** L. Neagh (H9080), no data (McLarnon and Carter, 2000). Downhill beach stream, Coleraine (C754326), 9 June 2000 (Langton, 2002). Downhill Forest, Coleraine (C760353), 24 March 2002 (PHL). R. Bann, Coleraine (C854304): 6 January 2000, 22 September 2002 and 23 January 2005 (PHL). Coleraine (C858304), 6 January, 4 February and 20 August 2002 (PHL). L. Neagh, Ballyronan (H948862), 4 July 2000 (Langton, 2002) and 15 May 2002 (PHL). **DOWN: HA 3 -** Glenaveagh stream, Glenaveagh Bridge (J255284), 29 May 1998 (PHL). **GALWAY: HA 29 -** L. Cutra, Gort (R485986), 24 May 2003 (PHL). **KERRY: HA 22 -** R. Clydagh, u/s Clydagh Bridge (W114826), June 1978 and R. Flesk, d/s Whitebridge (V987900), 24 June 1978 (Ashe, 1982 - sub *M. hygropetricus* Kieffer). **LEITRIM: HA 26 -** L. Allen, Drumshanbo Lock (G968110), 30 March 2000 (DAM). **MAYO: HA 33 -** bog pools, R. Glenamoy basin, Glenamoy (F896345), April to June 1973, CD (Dowling, 1975; Dowling and Murray, 1981)**: Clare Island -** roadside between Maum and Capnagower (L712857) and stream at Fawnglass (L713854), 4 June 2002 also roadside from Abbey to Knocknaveen (L689847), 5 June 2002 (Murray and Murray, 2003). Creggan L., Lecarrow (L689857), 10 June 1999 (Fahy, 2002 - sub *M. hygropeticus* Kieffer mis-spelling). **MEATH: HA 7 -** Headford Pond, Kells (N752763), 9 March and 4 April 1968 (Murray, 1972 - sub *M. hygrotetricus* Kieffer). Tailings pond, Randalstown, Navan (N845714), 10 March 1995 (Finnegan, 1998)**: HA 8 -** moist vegetation accumulation, Meadesbrook, Kilmoon (O040594), 23 October 2012 (DAM). Garden, between brassica leaves, Meadesbrook, Kilmoon (O038594), 7 September 1979 (DAM). **TIPPERARY: HA 25 -** L. Derg, Terryglass (M861008), 20 April 2009, EPA (DAM). **WICKLOW: HA 9 -** Pollaphuca Reservoir, Ballymore Eustace (N995080), 30 April 2009, EPA (DAM).

***Metriocnemus* (*Metriocnemus*) *fuscipes* (Meigen, 1818)**

ANTRIM: HA 5 - L. Mourne, Carrickfergus (J415924), 4 May 1999 (PHL). **CAVAN: HA 7 -** L. Mullagh, Mullagh (N680856), 23 July 1968 (Murray, 1972). **CORK: HA 19 -** L. Gouganebarra, Inchegeelagh (W009060), 27 July 1968 (Murray, 1972). **DERRY: HA 3 -** L. Neagh (H9080), no data (McLarnon and Carter, 2000). McFadyen's Garden, Coleraine (C848316), 14 April 2002 and 13 April 2003 (PHL). Pond, near R. Macquosin, Ballytinagh Road, Coleraine (C854255), 18 April 2004 (PHL). R. Bann, Coleraine (C854304), 10 April 2000 (PHL); Coleraine (C858304), 24 March 2004 (PHL). **DONEGAL: HA 38 -** R. Owencarrow, Glenveagh (C041229), 27 July 1985 (Heneghan, 1986). **DOWN: HA 5 -** Bangor

(J534823), 3 November 1997 (PHL). **DUBLIN: HA 9 -** bog pool, Featherbed (O120190), May, July and August 1974, CD (Dowling, 1975; Dowling and Murray, 1981). **GALWAY: HA 32 -** Letterfrack Stream, CNP, Letterfrack (L769529), 23 September 1986 (Heneghan, 1987). **KERRY: HA 22 -** Muckross Lake, Dundag Bay, Killarney (V964858), January 1973 (Douglas and Murray, 1980). **MAYO: HA 32 -** Belclare, Westport (L9682); Knappagh, Westport (L9880); lough near Westport (L9984) and Clogher L., Westport (M0388), July 1911 (all Grimshaw, 1912)**: HA 33 -** bog pools, Glenamoy (F896345), April to June 1973, CD (Dowling, 1975; Dowling and Murray, 1981). L. Carrowmore, Gortmore, Bangor Erris (F833266), 4 April 2002, WAM (DAM)**: Clare Island -** wetland, Ballytouhy (L696882); seepage, south of lighthouse (L695879); roadside at Ballytoughey Weavers (L699870); roadside between Maum and Capnagower (L712857) and Roadside, Bayview Hotel (L717857), 20 August 2002; roadside between Abbey and Knocknaveen (L689847), 5 June 2002; bogpool on Knockmore (L683857) and stream on north slope of Knockmore (L664864), 21 August 2002 (all Murray and Murray, 2003). Creggan L., Lecarrow (L689857), June to October 1998, July to November 1999 and L. Poirtin Fuinch (L706857), 13 May 1999 (Fahy, 2002). **MEATH: HA 7 -** R. Boyne, Bellinter Bridge (N894625), 18 August 1968 (Murray, 1972) and Headford Pond, Kells (N752763), 4 April 1968 (Murray, 1972)**: HA 8 -** lawn, Meadesbrook, Kilmoon (O040594), 1 January 2001 (DAM)

***Metriocnemus* (*Metriocnemus*) *inopinatus* Strenzke, 1950**

LEITRIM: **HA 26 -** L. Allen, Mountallen, Drumshanbo (G950145), 9 September 2008, EPA (Murray, 2010).

***Metriocnemus* (*Metriocnemus*) *picipes* (Meigen, 1818)**

CAVAN: HA 7 - R. Barora tributary, Relaghbeg (N679907), 5 April 1968 (Murray, 1972). **DERRY: HA 2 -** coastal pool, Ball's Point, Limavady (C645305), 8 August 2002 (PHL)**: HA 3 -** Garvagh House, Wood, Garvagh (C837154), 21 July 2002 (PHL). Pond, near R. Macquosin, Ballytinagh Road, Coleraine (C854255), 18 April and 16 May 2004 (PHL). R. Bann, Coleraine (C854304), 10 August 2012 (PHL); Coleraine (C858304), 17 June and 20 August 2002 (PHL). **KERRY: HA 22 -** L. Leane, Killarney, Muckross Boathouse (V965866), 29 August 1987, NOM (LJH). R. Clydagh, Caherbarnagh (W202842), March 1979 (Ashe, 1982). **MAYO: Clare Island -** roadside at Bayview Hotel (L716856), 28 April 2000 and small artificial tank, Knockaveen (L705856), 21 August 2002 (Murray and Murray, 2003)**: HA 26 -** turlough shore, Loughanboy, Ballyhaunis (M433816), 24 May 1986, DAM/WM (DAM). **MEATH: HA 8 -** lawn, Meadesbrook, Kilmoon (O040594), 2 April 1999 (DAM).

***Metriocnemus* (*Metriocnemus*) *terrester* Pagast, Thienemann and Krüger, 1941**
DUBLIN: HA 9 - bog pool, Featherbed (O120190), 1974, CD (Dowling and Murray, 1981). **WATERFORD: HA 16 -** R. Nier, Knockanaffrin (S256132), 6 May 1999, CB (PJA/NMI).

***Metriocnemus* (*Metriocnemus*) *tristellus* Edwards, 1929**
ANTRIM: HA 3 - reservoir, Killylane, Magherabane, Larne (J292985), 8 May 1999 (PHL)**: HA 5 -** Three-Mile-Water, Mossley (J380892), 4 May 1999, SMcB (Langton, 2004). **DERRY: HA 3 -** Downhill Forest, Coleraine (C760353), 24 March 2002 (PHL). R. Bann, Coleraine (C854304), 1-18 January and 11 December 2000, 22 September 2002 and 23 January 2005 (PHL). **ROSCOMMON: HA 26 -** R. Suck, Ballyforan (M817464), 16 October 1981, BPH (Hayes, 1991; Murray, 2005).

[Langton (2004) provided the first published records for Ireland from HA 3 (1999) and HA 5 (2000). Earlier unpublished records were known from 1981 at Ballyforan, HA 26 (Hayes, 1991)].

***Metriocnemus* (*Metriocnemus*) *ursinus* (Holmgren, 1869)**
ANTRIM: HA 5 - Three-Mile-Water, Mossley (J380892), 4 May 1999, SMcB (Langton, 2004). **DERRY: HA 3 -** Downhill Forest, Coleraine (C760353), 24 March 2002, SMcB (Langton, 2004). **MAYO: HA 33 -** bog pools, Glenamoy (F896345), April to June and August 1973, CD (Dowling, 1975; Dowling and Murray, 1981).

[Langton (2004) recorded *M. ursinus* as new for Ireland from HA 3 (2002) and HA 5 (1999). An earlier published record was known from HA 33 (1973)].

***Nanocladius* (*Nanocladius*) *balticus* (Palmén, 1959)**
ANTRIM: HA 4 - Dungonnell Dam, Newtown Crommelin (D193170), 20 June 2000 (Langton, 2002). Altnahinch Reservoir, Ballymoney (D120234), 22 August 2001 (PHL). **CAVAN: HA 36 -** L. Gowna, north basin, Arnagahan (N285920), 7 June 2006, EPA (DAM). L. Macnean, lower, Blacklion (H106378), 7 June and 18 September 2007, EPA (DAM). **CLARE: HA 25 -** L. Graney, Doorus, west shore (R556930), 6 September 2006 and 15 June 2009, EPA (DAM)**: HA 27 -** L. Bunny, Aughrim (R377965), 1 August 2006 and 14 September 2009, EPA (DAM). Castle L., west shore, Kilmurry, Sixmilebridge (R482691), 17 September 2009, EPA (DAM)**: HA 28 -** L. Doo, Milltown Malbay (R123721), 8 July 2009, EPA (DAM). L. Keagh, Milltown Malbay, south west shore (R100811), 8 July 2009, EPA (DAM). L. Naminna, Boolteagh (R178710), 11 June, 7 July and 15 September 2009, EPA (DAM). **CORK: HA 19 -** L. Allua, Ballingeary (W180652), 20 August 2008, EPA (DAM). **DERRY: HA 1 -** Upper Creggan Reservoir, Creggan, Derry (C417173), 10 May 2001 (PHL)**: HA 3 -** L. Fea, Draperstown

(H760868), 15 May 2002 (PHL). **DONEGAL: HA 36 -** L. Golagh, Ballyshannon (G965655) and L. Tullynasiddagh, Ballyshannon (G983656), 7 July 2009, EPA (DAM). L. Unshin, Ballyshannon (G951637), 8 June 2009, EPA (DAM). L. Vearty, Ballyshannon (G995658), 8 July 2009, EPA (DAM)**: HA 37 -** L. Eske, Donegal (G973844), 14 July 2009, EPA (DAM)**: HA 38 -** L. Dunglow, Dunglow, The Rosses, east shore (B787117), 19 July 2000 (Langton, 2002) and west shore (B782119), 17 June 2009, EPA (DAM). L. Nasnahida, Doocharry, Dunglow (B852076), 17 June and 6 August 2009, EPA (DAM). L. Keel, Crolly (B848162), 13 August 2009, EPA (DAM). L. Kinny, Fanad (C204442) and L. Shannagh, Magheradrumman, Fanad (C216450), 9 September 2009, EPA (DAM). L. Nadourcan, Glenveagh (C054228), 18 July 2000 (Langton, 2002)**: HA 39 -** L. Gartan, Church Hill (C055159), 10 June 2009, EPA (DAM). L. Fern, Millford (C180233), 23 July 2009, EPA (DAM). R. Glashagh, Drumbologe, Letterkenny (C096153), 18 July 2000 (Langton, 2002). **FERMANAGH: HA 35 -** R. Glen, Garrison (G943522), 29 June 2000 (Langton, 2002). **GALWAY: HA 30 -** L. Corrib Upper, Oughterard (M138486), 14 September 2007, EPA (DAM). L. Ross, Moycullen (M188365), 8 August and 5 September 2007, EPA (DAM). L. Anillaun, Maam Cross (L980470), 19 April 2007, EPA (DAM). L. Ballyquirke, Moycullen (M232317), 14 September 2007, EPA (DAM)**: HA 31 -** L. Ballynakill, Gorumna (L867236), 15 May 2006, EPA (DAM). L. Shindilla, Maam Cross, south shore, Derreennacreeva (L958460), 7 June 2007, EPA (DAM). L. Ahalia, Maam Cross, north east shore (L971402), 18 June 2009, EPA (DAM). L. Aunwillan, Carraroe (L936255), 7 June, 25 July and 13 September 2007, EPA (DAM). **KERRY: HA 21 -** L. Brin, Derreeny (V780775), 13 July 2008, EPA (DAM)**: HA 22 -** L. Acoose, Slievanore, Killorglin (V755854), 9 July 2008, EPA (DAM). L. Caragh, Killorglin (V719904), 20 June and 15 July 2008, EPA (DAM). R. Loo, Aughnanus Bridge, Crohane (W045790), 11 August 1978 (Ashe, 1982; Murray and Ashe, 1983; Murray, 2005). **LEITRIM: HA 26 -** L. Acres, Drumshanbo (G968099), 11 June 2008, EPA (DAM). L. Rinn, Mohill (N095943), 25 June 2008, EPA (DAM)**: HA 35 -** L. Glencar, Glencar (G757435), 2 September 2008, EPA (DAM). **MAYO: HA 32 -** R. Owenduff, south of Leanane on N59 (L810595), 9 May 2003, DAM/WM (DAM). L. Doo, Delphi, west shore (L835681), 12 July 2006, EPA (DAM). L. Feeagh, Newport (L975983), 24 July 2008, EPA (DAM)**: HA 34 -** L. Levally, Massbrook (G146043), 23 July 2008, EPA (DAM). **ROSCOMMON: HA 26 -** L. Key, Hogs Island Pier, Boyle (G825054), 9 September 2008, EPA (DAM). **WICKLOW: HA 10 -** L. Tay, Luggala (O163008), 2 September 2009, EPA (DAM). Upper Glendalough Lake, Laragh, WMNP (T100960), 29 July 2009, EPA (DAM)**: HA 9 -** Pollaphuca Reservoir, Ballymore Eustace (N995080), 30 April 2009, EPA (DAM).

***Nanocladius* (*Nanocladius*) *dichromus* (Kieffer, 1906)**

ANTRIM: HA 3 - L. Neagh, Antrim Bay (J135866), 22 August 2001 and Churchtown Point (J056852), 22 May 2002 (PHL)**: Rathlin Island -** Ushet L. (D154485), 5 July 2004 (PHL). **CAVAN: HA 36 -** R. Erne, Kilsarin (N362910), 27 May 1982 (Hayes, 1991). Glasshouse L., Killashandra (H270060), 7 June and 18 September 2007, EPA (DAM). L. Annagh, Butler's Bridge (H394125), 3 July 2007, EPA (DAM). L. Garty, Arvagh (N278978), 12 April and 18 July 2007, EPA (DAM). L. Gowna, Arnagahan (N285920), 18 September 2007, EPA (DAM). L. Macnean, lower, Blacklion (H106378), 18 September 2007, EPA (DAM). L. Oughter, Killashandra (H349051), 6 June 2007, EPA (DAM). L. Sillan, Shercock (H705067), 8 June 2007, EPA (DAM)**: HA 7 -** L. Acurry, Baileborough (N584990), 5 July 2007, EPA (DAM). **CLARE: HA 25 -** L. Alewnaghta, west shore, Whitegate (R758908), 20 April, 17 June, 16 July 2009, EPA (DAM). L. Graney, Doorus, west shore (R556930), 8 June 2006, EPA (DAM)**: HA 27 -** L. Bunny, Aughrim (R377965), 7 June, 4 July and 5 September 2006 also11 June, 14 July and 14 September 2009, EPA (DAM). L. Cullaun, Corrofin, mid east shore (R317905), 3 May, 7 June, 4 July, 1 August and 5 September 2006 also 16 June, 22 July and 14 September 2009, EPA (DAM). L. Dromore, Ruan, Corrofin (R345858), 8 June 2006, EPA (DAM). L. Gortglass, south shore, Killadysert (R223596), 11 June and 7 July 2009, EPA (DAM). L. Muckanagh, Tubber, Corrofin (R368926), 2 May, 11 June and 2 August 2006, also 22 July 2009, EPA (DAM). L. Atedaun, Corrofin (R297884), 21 April and 22 September 2009, EPA (DAM). L. Rosroe, Newmarket on Fergus: north east shore (R448697), 16 June and 16 September 2009, south east shore (R442681), 12 August 2009, EPA (DAM)**: HA 28 -** L. Doo, Milltown Malbay (R123721), 8 July 2009 and north west shore (R114722), 15 September 2009, EPA (DAM). L. Keagh, Milltown Malbay, north shore (R100813), 11 June 2009 and south west shore (R100811), 8 July 2009, EPA (DAM). L. Lickeen, Kilfenora (R175909), 6 June and 6 September 2006 and west shore (R164908), 15 September 2009, EPA (DAM). L. Naminna, Boolteagh (R178710), 7 July and 15 September 2009, EPA (DAM)**: HA 29 -** L. Skeardeen, Kilcorkan (R388991), 7 April and 17 June 2009, EPA (DAM). **CORK: HA 19 -** L. Allua, Ballingeary (W180652), 20 August 2008, EPA (DAM)**: HA 20 -** L. Ballin, Leap (W199389), 9 April and 21 August 2008, EPA (DAM). L. Coolkllure, Dunmanway (W177539), 17 June and 16 September 2008, EPA (DAM). L. Curraghalicky, Drinagh, Dunmanway (W234046), 17 June 2008, EPA (DAM). L. Skeagh (Schull Reservoir), Schull (V937338), 27 August and 17 September 2008, EPA (DAM). L. Tooreen, Crookhaven (V790259), 10 April and 17 September 2008, EPA (DAM)**: HA 21 -** L. Glenbeg, Ardgroom (V706530), 18 June and 3 September 2008, EPA (DAM). **DERRY: HA 3 -** L. Neagh (H9080), no data (McLarnon and Carter, 2000); L. Neagh, Ballyronan (H948862), 4 July 2000 (Langton, 2002) also 7 May 2001, 22 and 31 May 2011 (PHL). R. Bann, Coleraine (C854304), 18 April to 13 October 1999, 3 May to 8 October

2000, April 2001 to 30 June 2001, 22 September 2002, 25 April and 2 May 2010, 27 July 2012 (all PHL). **DONEGAL: HA 36 -** L. Golagh, Ballyshannon (G965655), 21 April, 8 June, 7 July and 8 September 2009, EPA (DAM). L. Tullynasiddagh, Ballyshannon (G983656), 7 July 2009, EPA (DAM). L. Unshin, Ballyshannon (G951637), 6 July 2009, EPA (DAM)**: HA 38 -** L. Dunglow, Dunglow, The Rosses, west shore (B782119), 5 August 2009, EPA (DAM). L. Anure, east shore, Loughanure (B818162), 17 June and 12 August 2009, EPA (DAM). L. Keel, Crolly (B848162), 7 September 2009, EPA (DAM). L. Glen, Glen (C105292), 16 June 2009, EPA (DAM). L. Reelan, Reelan (C131272), 8 September 2009, EPA (DAM). L. Kindrum, Kindrum, Fanad (C186430), 16 June and 9 September 2009, EPA (DAM). L. Kinny, Fanad (C204442), 6 June and 9 September 2009, EPA (DAM). L. Altercan, The Rosses (B755158), 19 July 2000 (Langton, 2002)**: HA 39 -** L. Gartan, Church Hill (C055159), 10 June and 22 July 2009, EPA (DAM). L. Akibbon, Church Hill (C068184), 23 April and 9 September 2009, EPA (DAM). **FERMANAGH: HA 36 -** stream, Lisnaskea (H384306), 27 June 2000 (Langton, 2002). **GALWAY: HA 29 -** L. Rea, east shore, Loughrea (M624153), 25 May 2003 (PHL)**: HA 30 -** L. Corrib Upper, Oughterard (M138486), 11 June 2007, EPA (DAM); L. Corrib Lower, Moycullen (M271360), 11 April 2007, EPA (DAM). L. Anillaun, Maam Cross (L980470), 8 June and 1 August 2007, EPA (DAM). L. Ballyquirke, Moycullen (M232317) 13 April, 14 June and 14 September 2007, EPA (DAM). L. Beaghcauneen, Ballinaboy (L679470), 6 June and 18 July 2007, EPA (DAM). L. Bofin, Maam Cross (M034441), 7 June and 31 July 2007, EPA (DAM). L. Adrehid, Oughterard (M055428), 25 May 2003 (PHL)**: HA 31 -** L. Ahalia, north east shore (L971402), 23 September 2009, EPA (DAM). L. Ballynakill, Gorumna (L867236), 15 May 2006, EPA (DAM). L. Nahasleam, Maam Cross (L972440), 8 August 2006 and 1 August 2007, EPA (DAM). L. Ballynahinch, Ballynahinch (L777478), 23 July and 13 September 2007, EPA (DAM). L. Derryclare, Recess (L825485), 17 April and 16 July 2007, EPA (DAM)**: HA 32 -** L. Ballynakill, Cleggan (L639581), 5 June, 11 July and 11 September 2007, EPA (DAM). L. Pollacappul, Kylemore (L754582), 5 June 2007, EPA (DAM). **KERRY: HA 21 -** L. Cloonaghlin, Waterville (V611708), 19 June and 24 July 2008, EPA (DAM). L. Currane, Waterville (V535664), 9 May, 18 June and 22 July 2008, EPA (DAM). L. Namona, Waterville (V596711), 23 July and 10 September 2008, EPA (DAM)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Caragh: Lower Brida Valley (V740805), d/s Owenroe R. confluence (V720815), Bealalaw Bridge (V715832), 1975 (Dowling *et al.*, 1981); R. Caragh, outflow from L. Caragh, Killorglin (V713920), 4 August 1975, CD (DAM). L. Caragh, Killorglin (V719904), 20 June 2008, EPA (DAM). L. Guitane, Crohane, Killarney (W025846), 8 July 2008, EPA (DAM). L. Leane, Killarney, mid lake (V930883), 27 July 1972 (Douglas and Murray, 1980); Killarney (V931886), 22 April, 24 June, 10 July 2008, EPA (DAM). Muckross Lake, Killarney (V950853), 24 April, 16 July and 18 September 2008, EPA

(DAM). Upper Lake, Killarney (V909821), 24 June and 17 July 2008, EPA (DAM)**: HA 23 -** L. Gill, Castlegregory (Q603139), 28 August 2008, EPA (DAM). **LAOIS: HA 15 -** R. Nore, Castletown Bridge (S326930), 27 August 1981 (Hayes, 1991). **LEITRIM: HA 26 -** L. Acres, Drumshanbo (G968099), 24 July 2008, EPA (DAM). L. Boderg, Derrycarne (N013915), 29 July 2008, EPA (DAM). L. Bofin, Rinnafarna, Dromod (N036891), 29 July 2008, EPA (DAM)**: HA 35 -** L. Annary, Dromahair (G817338), 10 June 2008, EPA (DAM). L. Glenade, Glenade, Manorhamilton (G831457), 22 July 2008, EPA (DAM)**: HA 36 -** L. Drumlaheen, Feenagh, Ballinamore (H091071), 17 July 2007, EPA (DAM). **LIMERICK: HA 24 -** Bleach L., Pallaskenry (R441569), 13 June, 28 July and 16 September 2009, EPA (DAM). **LONGFORD: HA 26 -** L. Forbes, Cloonard, Newtownforbes (N084821), 27 August and 10 September 2008, EPA (DAM). **MAYO: HA 26 -** L. Nanoge, Urlaur (M506903), 24 April and 18 June 2008, EPA (DAM)**: HA 30 -** L. Aille, Aille, Westport (M071807), 8 August 2008, EPA (DAM). L. Carra, Keel Bridge, Ballinrobe (M165680), 28 April, 19 June and 26 September 2008, EPA (DAM)**: HA 32 -** L. Ballin, Westport, south shore (L994878), 22 April 2008 and north shore (L996882), 25 June 2008, EPA (DAM). L. Moher, Liscarney, Westport (L977766), 21 April, 24 June and 18 September 2008, EPA (DAM)**: HA 34 -** R. Moy, Cloongullaun (G348016), 30 August 1982 (Hayes, 1991). L. Conn, Brackwansha (G191098), 18 June 2008, EPA (DAM); L. Conn, Illannaglashy (G207070), 20 August 2008, EPA (DAM). L. Cullin, Drummon Wood (G235046), 20 August 2008, EPA (DAM). L. Lannagh, Castlebar (M105880), 30 June 2008 and west shore (M109883), 21 August 2008, EPA (DAM). L. Washpool, Ballycarra (M219842), 19 June and 25 September 2008, EPA (DAM). **MEATH: HA 7 -** R. Boyne, Bellinter Bridge (N894625), 7 July 1968 (Murray, 1972) and 11 August 1999, DAM/WM (DAM); New Bridge, Navan (N873679), 18 August 1988; Stackallen Bridge (N917713), 17 August 1988 (Murray, 1988) and 19 July 1989 (DAM); Slane Bridge (N965737), 19 July 1989 (DAM). R. Blackwater, Bloomsbury Bridge, Oristown (N793741), 19 August 1988 (Murray, 1988). **MONAGHAN: HA 36 -** L. Summerhill, Clones (H490279), 26 April 2007, EPA (DAM). **OFFALY: HA 25 -** R. Shannon, Shannon Bridge (M967254), 15 August 1981 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627), 16 July 1981 and Ballyforan (M817464), 27 July 1982 (Hayes, 1991; Murray, 2005). R. Lung, Lung Old Bridge, Tibohine (M652928), 16 June 1999 (DAM). L. Ree, Yew Point, Barley Harbour (N018485), 13 June 2007, EPA (DAM). L. Annaghmore, Strokestown, Elphin (M902838), 12 June 2008, EPA (DAM). L. Cavetown, Boyle (M832974), 11 June 2008, EPA (DAM). L. Glinn, Loughglinn, Castlerea (M629870), 12 June, 25 August and 9 September 2008, EPA (DAM). Grange L., Greywood, Strokestown (M938857), 28 July 2008, EPA (DAM). L. Annaghmore, Strokestown, Elphin (M902838), 15 July and 2 September 2008, EPA (DAM). **WATERFORD: HA 16 -** Ballyscanlan Reservoir, Tramore (S540030), 22 April 2009 and 1 September 2009, EPA

(DAM)**: HA 17 -** L. Carrigavantry, Tramore (S548022), 21 April, 3 July, 19 August and 1 September 2009, EPA (DAM). **WESTMEATH: HA 26-** L. Owel, Mullingar (N421566), 21 August 1973, BPH (Murray, 2005) and 1981 (Forde, 1985). L. Derravaragh, Crookedwood (N468634), 25 June 2007, EPA (DAM)**: HA 7 -** L. Lene (N510685), 26 April, 22 August and 19 September 2006, EPA (DAM). **WICKLOW: HA 10 -** L. Dan, Roundwood (O157035), 15 June 2009, EPA (DAM). L. Tay, Luggala (O163008), 28 July and 2 September 2009, EPA (DAM).

***Nanocladius* (*Nanocladius*) *rectinervis* (Kieffer, 1911)**

ANTRIM: HA 3 - R. Clogh, Clough Mills (D105109) and Glenravel Water, Gartnageeragh, Newtown Crommelin (D147154), 2 July 2000 (Langton, 2002). R. Main, Randalstown (J084904), 13 October 2000 (Langton, 2002). R. Kells, Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002). R. Sixmilewater, Templepatrick (J227867), 4 May 1999 (PHL)**: HA 4 -** R. Bush, Seneirl Bridge (C943362), 16 July 2000 (Langton, 2002). R. Bush, Conogher Bridge (C963305), 10 September 2000 and Stranocum (D009307), 2 July 2000 (Langton, 2002)**: HA 5 -** R. Ravernet, Baileysmill, Hillsborough (J324587), 22 June 2000 (Langton, 2002). Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **CARLOW: HA 12 -** R. Slaney, Motabower Bridge (S832778) and Kildavin (S899597), 28 July 1981 (Hayes, 1991). R. Derreen, Acann Bridge (S900781), 29 July 1981 (Hayes, 1991). **CAVAN: HA 36 -** R. Erne: Dingin's Bridge (N331948), 27 August 1982; Kilsarin (N362910), 27 May 1982; Carrigan (N391935), 27 August 1982 and Drumbarry (N462951), 17 August 1982 (all Hayes, 1991). **CLARE: HA 27 -** Castle L., Kilmurry, Sixmilebridge, south west shore (R481688), 12 June 2009 and west shore (R482691), 17 September 2009, EPA (DAM)**: HA 28 -** R. Creegh, Mountrivers Bridge, Doonbeg (Q991659) and R. Doonbeg, Derryard (Q979644), 30 July 1982 (Hayes, 1991). **CORK: HA 18 -** R. Blackwater: Ballymacquirk Bridge, Banteer (W382989), Roskeen Bridge, Banteer (W444988) and Lombardstown (W463968), 1 September 1981; Killavullen (W648998), 31 August 1981; Knocknagree (W159975), Duncannon (W180931), Shamrock Bridge, Millstreet (W221935), Charles Bridge, Millstreet (W248943), Keale Bridge, Millstreet (W294936), 2 September 1981 (all Hayes, 1991)**: HA 20 -** R. Ilen, Drimoleague (W098454), Madore (W103419) and Hollybrook (W117363), 24 August 1983 (Hayes, 1991). R. Bandon: Long Bridge, Dunmanway (W242631), 18 April to 31 October 1980; Bealabouy Bridge, Dunmanway (W257514), 20 March to 31 October 1980; u/s Ballineen (W331537), 18 April to 31 October 1980; Ballineen Bridge (W434538), 27 May to 25 September 1980; Castle Bernard (u/s Bandon) (W472546), 18 April to 25 September 1980; 2.5km d/s Bandon (W516569), 18 April to 31 October 1980 (all Morgan, 1982). **DERRY: HA 2 -** R. Owenbeg, Feeny picnic area, Feeny (C645058), 26 June 2000; R. Roe, Largy Bridge, Limavaddy

(C681202), 14 July 2000; R. Castle (Castle R.), Ardmore Bridge, Limavady (C706207), 9 June 2000 (all Langton, 2002)**: HA 3 -** Downhill Lake, Downhill Forest, Coleraine (C757354), 17 March 2000 and 24 March 2002 (PHL); Downhill Forest stream, Coleraine (C759348), 25 July 1999 (PHL). R. Macosquin, Black Bridge, Ballylintagh (C854256), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 29 March to 13 October 1999, 19 February to 8 October 2000, 26 April to 30 June 2001, 22 September 2002, 11 April to 2 May 2010, 27 July and 3 August 2012 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 4 July 2000 (Langton, 2002) and 7 May 2001 (PHL). **DONEGAL: HA 37 -** R. Eanymore, Letterbara Bridge (G883825) and Drumagra Bridge (G863822), 10 August 1982 (Hayes, 1991). R. Oily, Claggen (G751803), 8 August 1982 and R. Stragar, Duninkeely (G727792), 10 August 1982 (Hayes, 1991)**: HA 38 -** L. Nacung, upper, Dunlewy (B904191) and R. Gweedore, Crolly (B827184), 19 July 2000 (Langton, 2002). R. Owencarrow, d/s road bridge, Glenveagh (C043235), 18 July 2000 (Langton, 2002)**: HA 39 -** R. Leannan, Kilnacrenan (C145200), 12 August 1982 and Claragh (C197210), 13 August 1982 (Hayes, 1991). R. Crana, Buncrana (C347328), 15 August 1982 (Hayes, 1991). L. Akibbon, Church Hill (C068184), 22 July 2009, EPA (DAM). L. Fern, Millford (C180233), 23 July 2009, EPA (DAM). R. Swilly, Newmills, Letterkenny (C125092), 18 July 2000 (Langton, 2002). **DONEGAL: HA 40 -** R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991). **DUBLIN: HA 9 -** R. Dodder, Milltown (O168303), 13 May 1946 (Grey, 1946). **FERMANAGH: HA 35 -** R. Glen, Garrison (G943522), 29 June 2000 (Langton, 2002)**: HA 36 -** R. Hollybrook, Lisnaskea (H373310), 27 June 2000 (Langton, 2002). **GALWAY: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 and R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991)**: HA 30 -** R. Loughkip, Ballyquirk, Moycullen (M224313), 17 August 1981 and R. Grange, Grange Bridge (M428498), 16 August 1981 (Hayes, 1991). L. Corrib Upper, Oughterard (M138486), 11 April 2007, EPA (DAM). L. Ross, Moycullen (M188365), 8 August 2007, EPA (DAM). L. Anillaun, Maam Cross (L980470), 19 April 2007, EPA (DAM). L. Beaghcauneen, Ballinaboy (L679470), 5 April, 6 June and 18 July 2007, EPA (DAM). L. Bofin, Maam Cross (M034441), 18 April 2007, EPA (DAM). R. Owenriff, Oughterard (M112426), 25 May 2003 (PHL)**: HA 31 -** R. Owentouey, Tullywee Bridge, Recess (L873474), 18 August 1981 (Hayes, 1991). L. Ahalia, Maam Cross, north east shore (L971402), 22 April and 23 September 2009, EPA (DAM). **KERRY: HA 18 -** R. Blackwater, Lacknastooka (R153008), 2 September 1981 (Hayes, 1991)**: HA 21 -** R. Inny, Scarriff Bridge (V504696), 24 August 1983 (Hayes, 1991). R. Owbaun, Dromderalough, Kilgarvan (V971783), 16 April 2004, JRB (DAM)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). L. Leane, Killarney (V931886), 18 September 2008, EPA (DAM). R. Clydagh: Caherbarnagh (W202842), u/s Clydagh Bridge (W114826) and Knocknagowan (W187837), April to October, 1978 (Ashe, 1982). R. Flesk: d/s Clydagh/Loo

confluence (W084814), Garries Bridge (W082835), Flesk Bridge (W034876), d/s Whitebridge, d/s New Bridge (V963885) and u/s L. Leane (V964894), April to October 1978 (Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), April to October 1978 (Ashe, 1982)**: HA 23 -** L. Cam, Castlegregory (Q597079), 25 June 2008, EPA (DAM). **KILDARE: HA 7 -** R. Boyne, Edenderry (N636346) and Ballyboggan (N639402), 9 July 1981 (Hayes, 1991)**: HA 9 -** R. Liffey, Sallins (N881245), 17 July 1983 (Hayes, 1991). **KILKENNY: HA 15 -** R. Nore: Threecastles (S458626), 27 August 1981; Ballyragget (S445707), Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (all Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Castletown Bridge (S326930), Kilbricken (S362898) and u/s Durrow (S416787), 27 August 1981 also Athanagh (S423763), 28 August 1981 (Hayes, 1991). **LEITRIM: HA 26 -** L. Bofin, Rinnafarna, Dromod (N036891), 29 July 2008, EPA (DAM)**: HA 35 -** L. Annary, Dromahair (G817338), 23 July 2008, EPA (DAM). L. Belhavel, Killarga, Dromahair (G878288), 2 April 2008, EPA (DAM). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514) and d/s Cappamore (R779504), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Owenwee, u/s Aghamore Bridge, Westport (L972817), 5 August 2004, DAM/WM (DAM). L. Fin, Delphi (L841657), 28 June 2006, EPA (DAM). L. Feeagh, Newport (L975983), 24 July and 17 September 2008, EPA (DAM)**: HA 33 -** L. Carrowmore, Bangor Erris: Gortmore (F833266), 29 September 2004, WAM (DAM), Derreens (F833299), 9 April 2008 and west shore (F830282), 17 September 2008, EPA (DAM)**: HA 34 -** R. Moy, Bellanacurra (G403047), 29 August 1982 (Hayes, 1991). L. Mallard, Castlebar (M121902), 30 September 2004, DAM/WM (DAM). L. Cullin, Drummon Wood (G235046), 18 June 2008, EPA (DAM). L. Levally, Massbrook (G146043), 23 September 2008, EPA (DAM). **MEATH: HA 6 -** R. Dee, Drumconrath (N910894), 27 July 1983 (Hayes, 1991)**: HA 7 -** R. Boyne, Scarrif Bridge (N733527) and Newtown, Trim (N815571), 9 July 1981 (Hayes, 1991); Bellinter Bridge (N894626), 21 August 1988, Ardsallagh at St Bridget's Well (N897635), 7 July 1988; New Bridge, Navan (N873679), 18 August 1988 (all Murray, 1988); Stackallen Bridge (N918713), 19 July 1989 (Hayes, 1991) and 17 August 1988 (Murray, 1988) and Oldbridge (O045761), 19 July 1989 (DAM). R. Blackwater, Poolboy Bridge, Navan (N871681), 18 August 1988 and Bloomsbury Bridge, Oristown (N793741) and Donaghpatrick (N819723), 19 August 1988 (Murray, 1988)**: HA 8 -** R. Nanny, road bridge u/s Duleek (O035655) and at Duleek (O050683), 6 June 2006, DAM/WM (DAM). R. Nanny tributary, Boolies, Duleek (O044654), 6 June 2006, DAM/WM (DAM). Stream, Meadesbrook, Kilmoon (O038594), 10 August 1999, 9 June 2006 and 10 November 2012 (DAM). **MONAGHAN: HA 36 -** L. Drumlona, Rockcorry (H636176), 4 April 2007, EPA (DAM). **OFFALY: HA 25 -** R. Little Brosna, Milltown Park (S068907), Brosna Bridge (S077938), Sharavogue (S056953) and Newbridge (N016088), 2 September 1982 (all Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck: Ballyforan (M817464) and

Castlecoote (M809627), 16 July 1981 also Athleague (M825758), 14 August 1981 (Hayes, 1991). L. Glinn, Loughglinn, Castlerea (M629870), 25 August 2008, EPA (DAM). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168) and Metal Bridge, Tobercurry (G464138), 30 August 1982 (Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430) and R. Easky, Easky (G377378), 19 August 1983 (Hayes, 1991). Kilsallagh Reservoir, Kilsallagh (G734393), 23 July 2008, EPA (DAM). L. Gill, Sligo (G753335), 3 April 2008, EPA (DAM). **TIPPERARY: HA 15 -** R. Nore, Clonakenny (S116805), Nore Bridge (S133816), Quaker Bridge (S211868), 27 August 1981 (Hayes, 1991). **TYRONE: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WATERFORD: HA 18 -** R. Blackwater, Ballyduff (W964992) and Lismore (X047988), 31 August 1981 (Hayes, 1991). **WEXFORD: HA 11 -** R. Ounvarra, Ballycanew (T153519), 6 May 2006, DAM/WM (DAM)**: HA 12 -** R. Boro, Dunamore Bridge, Enniscorthy (S963366) and R. Slaney, Edernline Bridge (S977345), 29 July 1981 (Hayes, 1991). R. Sow tributary, Garylough Mill, Screen (T076302) and Movilla stream, Screen (T082311), 6 May 2006, DAM/WM (DAM). **WICKLOW: HA 10 -** R. Avonbeg, Glenmalure, Drumgoft Bridge (T105905). R. Avonmore, Castlehoward (T190833) and R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991). R. Glencullen, Knocksink (O218180), 22 April 1987, DEM/DAM (Morgan, 1989)**: HA 12 -** R. Derry, Balisland (S978645), 28 July 1981 and Bridgeland (T021744), 29 July 1981 (Hayes, 1991). R. Slaney, Knockgarrigan, Glen of Imail (S936937), Stratford Bridge (S895930) and Kilmurray (S889856), 28 July 1981 (Hayes, 1991; Murray, 2005).

***Orthocladius* (*Eudactylocladius*) *fuscimanus* (Kieffer, 1908)**

ANTRIM: HA 3 - L. Neagh, Churchtown Point (J056852), 13 October 2000 (Langton, 2002) and 22 August 2001 (PHL)**: HA 4 -** R. Glenariff (Inver/Glenariff), Cushendall (D215205), 2 July 2000 (Langton, 2002). **DERRY: HA 1 -** pool, Creggan, Derry (C414171), 17 May 2002 (PHL); inflow to Upper Creggan Reservoir, Derry (C413171), 26 April, 18 May 2001 and 17 May 2002 (PHL)**: HA 2 -** fire dam, Binevenagh Forest, Coleraine (C699304), 18 May 2000 (Langton, 2002)**: HA 3 -** R. Bann, Coleraine (C854304), 4 July 1999 and 19 February 2000 (Langton, 2002). L. Neagh, Ballyronan (H948862), 10 May 2000 (Langton, 2002), 15 May 2002 and 31 May 2011 (PHL). **FERMANAGH: HA 36 -** L. Erne, Lower, Black Bay (H072639), 27 April 2002 (PHL). L. Macnean, Upper, Belcoo (H042403), 29 June 2000 (Langton, 2002). **GALWAY: HA 25 -** L. Derg, Woodford (M794964), 24 May 2003 (PHL). R. Woodford, bridge on R351, Woodford (M732000), 24 May 2003 (PHL). **KERRY: HA 22 -** unnamed stream, Moll's Gap, Killarney (V864772), August 1987 (DAM). Curraghalia stream, north west of Moll's Gap (V845789), 17 April 2004, JRB (DAM). R. Flesk, d/s Clydagh/Loo confluence (W084814), 21 April 1979 (Ashe, 1987). Waterfall, L. Gouragh, Carrauntohill

Mountain (V810848), 30 June 1984 (Ashe, 1987)**: HA 23 -** R. Finglas, Camp, Tralee (Q698066), 2 May 1999, CB (PJA/NMI). **LEITRIM: HA 26 -** L. Boderg, Derrycarne, north west shore (N013915), 14 May 2008, EPA (DAM). **MAYO: Clare Island -** roadside, Bayview Hotel (L716856), 28 April 2000 (Murray and Murray, 2003; Murray, 2005). **MEATH: HA 7 -** animal drinking trough, Ardsallagh, Navan (N896635), 18 June 2000, DAM/WM (Murray, 2005). **ROSCOMMON: HA 26 -** R. Suck, Athleague (M825758), 14 August 1981 (Hayes, 1991). **TIPPERARY: HA 25 -** L. Derg, Dromineer (M809858), 17 June 2009, EPA (DAM). **TYRONE: HA 1 -** Dennet Stream, Essbeg Bridge, Lisnaskee (H384306), 27 June 2000 (Langton, 2002). **WESTMEATH: HA 7 -** L. Lene (N510685), 26 April 2006, EPA (DAM). **WEXFORD: HA 13 -** animal drinking trough, Horetown House (S870188), 12 June 2012 (DAM). **WICKLOW: HA 10 -** R. Glencullen, Knocksink (O218180), 25 March 1987, DEM/DAM (Morgan, 1989). Outflow from Glendalough Lake Upper, Laragh, WMNP (T109964), 16 July 1996, EME/DAM (McEntee, 1997). R. Glendasan, Laragh, WMNP (T100982), 24 June 1996 (DAM). R. Pollnass (above waterfall), Glendalough (T112958), 16 July 1996 (DAM).

***Orthocladius* (*Eudactylocladius*) *olivaceus* (Kieffer, 1911)**

CLARE: HA 28 - L. Lickeen, Kilfenora (R175909), 3 May and 6 June 2006, EPA (DAM). **CORK: HA 21 -** L. Glenbeg, Ardgroom (V706530), 3 and 17 September 2008, EPA (DAM). **DONEGAL: HA 1 -** L. Derg, Pettigo (H074743), 8 July 2009, EPA (DAM)**: HA 37 -** L. Eske, Donegal (G973844), 14 July 2009, EPA (DAM). **GALWAY: HA 31 -** L. Ballynahinch, Ballynahinch (L777478), 13 September 2007, EPA (DAM). **KERRY: HA 21 -** L. Eirk (Erik L.), Derrygarriff (V881777), 25 April 2005, JRB (DAM). L. Inchiquin, Kenmare (V837629), 18 June 2008, EPA (DAM)**: HA 22 -** L. Acoose, Slievanore, Killorglan (V755854), 19 June 2008, EPA (DAM). L. Guitane, Crohane, Killarney (W025846), 8 July and 9 September 2008, EPA (DAM). Muckross Lake, Muckross, Killarney (V950853), 16 July 2008, EPA (DAM). **MAYO: HA 32 -** L. Doo, Delphi, north east shore (L834689), 22 August 2002, DAM/WM (Murray and Murray, 2006). L. Feeagh, Newport (L975983), 24 July 2008, EPA (DAM). **WESTMEATH: HA 26 -** L. Killinure, Wineport (N067458), 24 April 2007, EPA (DAM).

***Orthocladius* (*Eudactylocladius*) sp. *mixtus*?**

CLARE: HA 27 - L. Muckanagh, south east shore, Tubber, Corrofin (R370922), 11 June and 14 September 2009, EPA (DAM). L. Rosroe, Newmarket on Fergus, north east shore (R449697), 16 September 2009, EPA (DAM). **LIMERICK: HA 24 -** L. Gur, Holycross (R646413), 13 June 2009, EPA (DAM). **MAYO: HA 34 -** L. More, Ballynagoraher (G115044), 4 April 2006, EPA (DAM).

***Orthocladius* (*Euorthocladius*) *ashei* Soponis, 1990**

[Records of *O.* (*E.*) *ashei* from Ireland prior to its description in 1990 were variously identified as *O. flaveolus, O. rusticus* or *O. Euorthocladius* sp.]

ANTRIM: HA 3 - R. Kells, Shank Bridge, Kells (J126982), 20 June 2000 and R. Clogh, Clough Mills (D105109), 2 July 2000 (Langton, 2002)**: HA 4 -** R. Bush, Ballyhoe Bridge (D077294), 2 July 2000 (Langton, 2002). R. Glendun (Glendun R.), Drumfresky, Cushendun (D193308), 2 July 2000 and Dungonnell Dam, Newtown Crommelin (D193170), 20 June 2000 (all Langton, 2002). **CORK: HA 20 -** R. Bandon: Long Bridge, Dunmanway (W242631), 18 April and 28 November 1980, 17 January 1981; Bealabouy Bridge, Dunmanway (W257514), 20 March 1980 and 17 January 1981; u/s Ballineen (W331537), 20 February, 20 March, 18 April, 31 October and 28 November 1980; R. Bandon, Ballineen Bridge (W434538), 20 February, 20 March, 18 April, 28 November 1980 and 17 January 1981; Castle Bernard (u/s Bandon) (W472546), 20 March, 18 April, 31 October, 28 November, 22 December 1980 and 17 January 1981; 2.5km d/s Bandon (W516569), 20 February, 20 March, 18 April, 25 August, 31 October, 28 November, 22 December 1980 and 17 January 1981 (all Morgan, 1982). **DERRY: HA 2 -** R. Roe, Deerpark Wood, Limavaddy (C682203), 9 June 2000 (Langton, 2002). R. Castle, Ardmore Bridge, Limavady (C706207), 9 June 2000 (Langton, 2002)**: HA 3 -** R. Aghadowey, Ballybritain Bridge (C859212), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 16 January 2005 and 2 May 2010 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 4 July 2000 (Langton, 2002). **DUBLIN: HA 9 -** R. Dodder: Fort Bridge, Bohernabreena (O009242), 29 September 1950, CFH (sub *O. rusticus*?) and 29 February 1968 (Murray, 1972 - sub *O. flaveolus*); R. Dodder, Pussy's Leap, Templeogue (O126281), March 1967 and 29 February 1968; Landsdown Road Bridge, April 1967 (Murray, 1972 - sub *O. flaveolus* Goetghebuer); R. Dodder, Firhouse (O104274), 21 April 1974 (Murray, 2005). **KERRY: HA 22 -** R. Clydagh: Caherbarnagh (W202842), u/s Clydagh Bridge (W114826) and Knocknagowan (W187837), April to October 1978, February and March 1979 (Ashe, 1982 as *O. Euo.* ?*rusticus*). R. Flesk: d/s Whitebridge (V987900), 15 May 1974 (Murray, 2005); d/s Clydagh/Loo confluence (W084814), Garries Bridge (W082835), Flesk Bridge (W034876), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), April to October 1978, February and March 1979 (all Ashe, 1982 - sub *O. Euo.* ?*rusticus*). **MAYO: HA 32 -** Owenwee R., Belclare Bridge, Westport (L959822), 7 May 2004, DAM/WM (DAM). **SLIGO: HA 35 -** L. Gill (G753335), 3 April 2008, EPA (DAM). **WICKLOW: HA 10 -** R. Glencullen, Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989). R. Avonbeg, Meetings Bridge (T188831), 11 July 1997 (Curran, 2001). R. Avonmore, Lion Arch Bridge (T194833), 11 July 1997 (Curran, 2001). R. Avoca, Whitebridge, Tigroney (T198821), 11 July and 27 October 1997; R. Avoca, Avoca Village (T203802), 11 July and 27 October 1997 (all

Curran, 2001).

***Orthocladius* (*Euorthocladius*) *rivicola* Kieffer, 1911**

ANTRIM: HA 3 - L. Neagh, Antrim Bay (J135866), 28 March 2001 (PHL). R. Kells, Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002)**: HA 4 -** R. Bush, Ballyhoe Bridge (D077294), 2 July 2000 (Langton, 2002). **CLARE: HA 28 -** R. Caher, 5km from source, Murroogh (M153089), 27 October 1999, CB (Kelly-Quinn *et al.*, 2003). **DERRY: HA 2 -** R. Ballykelly, Ballykelly (C623211) and R. Bessbrook, Limavady (C655212), 9 June 2000 (Langton, 2002)**: HA 3 -** R. Agivey, Garvagh (C838154), 30 May 2002 (PHL). R. Bann, Coleraine (C854304), 11 December 2000, 6 January and 7 April 2002, 25 April and 2 May 2010 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 7 May 2001 (PHL). **DUBLIN: HA 9 -** R. Dodder, Pussy's Leap, Templeogue (O126281), 16 July 1967 and Firhouse (O104274), 16 July 1967 (Murray, 1972); Milltown (O168303), 2 February 1949 and u/s Donnybrook (O177312), 19 December 1949 (Reilly, 1951). **KERRY: HA 22 -** R. Caragh, Bealalaw Bridge (V715832), 1975, CD (Dowling *et al.*, 1981). R. Clydagh, u/s Clydagh Bridge (W114826); R. Flesk, d/s Clydagh/Loo confluence (W084814), d/s Whitebridge (V987900) and d/s New Bridge (V963885), April and May 1978, February and March 1979 (all Ashe, 1982). R. Laune, Killorglin (V952787), February 1967 (Murray, 1972). **KILDARE: HA 9 -** R. Rye, Leixlip (N993370), 3 January 1968 (Murray, 1972). **LEITRIM: HA 35 -** L. Glencar, Glencar (G748434), 1 April 2008, EPA (DAM). **LONGFORD: HA 26 -** R. Camlin, Mullagh Bridge, d/s Longford (N116760), January 1965 (Murray, 1972). R. Camlin tributary, Longford Racecourse (N149767), March, April and June 1965 (Murray, 1965). **MAYO: HA 32 -** R. Carrowinsky, Glenkeen Road Bridge, Carrowinskey (L818724), 9 May 2003 (Murray, 2005). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). **MEATH: HA 8 -** R. Nanny, road bridge u/s Duleek (O035655) and road bridge at Duleek (O050683), 6 June 2006, DAM/WM (DAM). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627), 2 April 1981 (Hayes, 1991). **TIPPERARY: HA 25 -** R. Kilmastulla, Kilmastulla Bridge (R728698), March 1976 (DAM). **WEXFORD: HA 11 -** R. Ounvarra, Ballycanew (T153519), 6 May 2006, DAM/WM (DAM)**: HA 12 -** R. Sow tributary, Garylough Mill, Screen (T076302), 6 May 2006, DAM/WM (DAM). **WICKLOW: HA 10 -** R. Glencullen (Glencullen R.), Knocksink (O218180), 18 May 1987 (Morgan, 1989 - sub *O* (*E.*) ? *luteipes*).

***Orthocladius* (*Euorthocladius*) *rivulorum* Kieffer, 1909**

CORK: HA 20 - R. Bandon: Long Bridge, Dunmanway (W242631), 18 April and 27 May 1980; u/s Ballineen (W331537), 18 April 1980, Ballineen Bridge (W434538), 20 March and 18 April 1980; Castle Bernard (u/s Bandon) (W472546), 18 April 1980; 2.5km d/s Bandon

(W516569), 20 March and 18 April 1980 (all Morgan, 1982). **DERRY: HA 3 -** R. Moyola, New Bridge, Magherafelt (H955905), 7 May 2001 (PHL). **KERRY: HA 22 -** R. Annascaul, Annascaul (Q593017), 19 April 1981 (Hayes, 1991; Murray, 2005) and 2 July 1981 (Hayes, 1991). R. Clydagh, Caherbarnagh (W202842), u/s Clydagh Bridge (W114826) and Knocknagowan (W187837), April and May 1978, March 1979 (Ashe, 1982). R. Flesk: d/s Clydagh/Loo confluence (W084814), Garries Bridge (W082835), Flesk Bridge (W034876), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), April and May 1978, March 1979 (Ashe, 1982). **KILDARE: HA 9 -** R. Liffey, Straffan Bridge (N924293), 1929, WEF (Humphries and Frost, 1937). **TIPPERARY: HA 25 -** R. Kilmastulla, Kilmastulla Bridge (R728698), March 1976 (DAM). **WEXFORD: HA 12 -** R. Slaney, Edernline Bridge (S977345), 29 July 1981 (Hayes, 1991; Murray, 2005). **WICKLOW: HA 9 -** R. Liffey, Ballysmuttan Bridge (O157148), 1929, WEF (Humphries and Frost, 1937).

***Orthocladius* (*Euorthocladius*) *thienemanni* Kieffer, 1906**

DERRY: HA 2 - R. Ballykelly, Clagan (C628209), 9 June 2000 (Langton, 2002)**: HA 3 -** R. Aghadowey, Ballybritain Bridge (C859212), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 1 January to 6 April 2000 (PHL). **DOWN: HA 3 -** Upper R. Bann, Katesbridge (J210407), 26 August 1998 (PHL); Upper R. Bann tributary, Poland's Bridge, Banbridge (J193428), 26 August 1998 (PHL). **DUBLIN: HA 9 -** bog pool, Featherbed (O120190), 1974, CD (Dowling and Murray, 1981). R. Dodder, u/s Donnybrook (O177312) and Milltown (O168303), 1 November 1948 (Reilly, 1951). **GALWAY: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 and R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991). **KERRY: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). **KILDARE: HA 9 -** R. Liffey, Straffan Bridge (N924293), 1929, WEF (Humphries and Frost, 1937). **MAYO: HA 33 -** bog pools, Glenamoy (F896345), February to April, June and August 1973, CD (Dowling, 1975; Dowling and Murray, 1981). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627), 16 July 1981 (Hayes, 1991). **SLIGO: HA 35 -** L. Arrow (G789123), September 1964 (Murray, 1972). **TYRONE: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WICKLOW: HA 9 -** R. Liffey, Ballysmuttan Bridge (O157148), 1929, WEF (Humphries and Frost, 1937)**: HA 10 -** R. Glencullen, Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989)**: HA 12 -** R. Slaney, Stratford Bridge (S895930) and Kilmurray (S889856), 28 July 1981 (Hayes, 1991).

***Orthocladius* (*Mesorthocladius*) *frigidus* (Zetterstedt, 1838)**

ANTRIM: HA 4 - Benvarden Pond, Benvarden Garden, Derrykeegan (C946334), 15 May 2005, (PHL)**: HA 5 -** Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **ARMAGH:**

HA 3 - Upper R. Bann tributary, Cappagh (J156425), 25 May 1997 (PHL). **CAVAN: HA 7 -** R. Barora tributary, Relaghbeg (N679907), January 1968 (Murray, 1972). **CLARE: HA 28 -** R. Caher, Murroogh, 5km from source (M153089), 27 October 1999, CB (Kelly-Quinn *et al.*, 2003). **CORK: HA 19 -** R. Sullane tributary, west of Coolea (W119756), 16 April 2004, JRB (DAM). **DERRY: HA 1 -** Upper Creggan Reservoir, Derry (C417173), 17 May 2002 (PHL); pool, Creggan, Derry (C414171), 17 May 2002 (PHL); inflow to Upper Creggan Reservoir, Derry (C413171), 10 and 18 May 2001, 17 May 2002 (PHL)**: HA 2 -** R. Ballykelly, Clagan (C628209) and burn at Largantea picnic area, Formoyle, Coleraine (C738287), 9 June 2000 (Langton, 2002)**: HA 3 -** Downhill beach stream, Coleraine (C754326) and Balinrees Reservoir, Coleraine (C794300), 9 June 2000 (Langton, 2002). Howell's Tarn stream, Ballywildrick, Coleraine (C766325), 7 April 2002 (PHL). Inflow to Balinrees Reservoir, Coleraine (C793307), 20 March 1999 (PHL). R. Aghadowey, Ballybritain Bridge (C859212), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 18 March and 30 September 1999, 19 February 2000, 6 and 18 February and 27 April 2001, 11 April 2010 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 8 October 2006 (PHL). **DONEGAL: HA 38 -** stream to R. Owenveagh, Glenbeagh Cottage, Glenveagh (B998175), 4 June 1986 (Heneghan, 1986). Small stream, near L. Nadurcan, Glenveagh (C055225), 24 July 1985 (Heneghan, 1986). R. Ray, Crocnalaragh (B989272), 12 August 1982 (Hayes, 1991). L. Shannagh, Magheradrumman, Fanad Penninsula (C216450), 2 April 2009, EPA (DAM)**: HA 39 -** L. Akibbon, Church Hill (C068184), 23 April 2009, EPA (DAM). **DOWN: HA 3 -** Eel Burn, Shanrod House, Shanrod (J223477), 26 March and 14 August 1998 (PHL). R. Rocky (d/s R. Shanky confluence), Hilltown (J233277), 29 May 1998 (PHL). R. Rocky (d/s Bridge), Hilltown (J234277), 29 May 1998 (PHL). R. Kinnahalla, Hilltown (J239292), 29 May 1998 (PHL). Glenaveagh stream, Glenaveagh Bridge (J255284), 29 May 1998 (PHL). **DUBLIN: HA 9 -** R. Dodder: Maureens Brook (Dodder upper), west of Glencree (O126176), 11 May 2004, JRB (DAM); source headwater (O125187), 10 June 1968 (Murray, 1972); Bohernabreena aqueduct (O104205), 29 April 1947, CFH (DAM); Fort Bridge, Bohernabreena (O009242), 5 April 1948 (Fitzgerald, 1947). **FERMANAGH: HA 36 -** R. Colebrook tributary, Tullyweel, Fivemiletown (H416474), 23 April 1998 (PHL); R. Colebrook, Mullaghfad (H510408), 4 June 1997 (PHL); R. Colebrook tributary, Carricknagob (H437407), 18 September 1998 (PHL). **GALWAY: HA 25 -** R. Woodford, bridge on R351, Woodford (M732000), 24 May 2003 (PHL)**: HA 31 -** L. Ardderry, Maam Cross (L982458), 1 August 2007, EPA (DAM). **KERRY: HA 21 -** L. Namona, Waterville (V596711), 8 May 2008, EPA (DAM). R. Owbaun, Dromderalough, Kilgarvan (V971783), 16 April 2004, JRB (DAM)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 19 April and 2 July 1981 (Hayes, 1991). R. Caragh, Upper Brida Valley (V785810) and Lower Brida Valley (V740805), 1975, CD (Dowling *et al.*, 1981). R. Clydagh, Caherbarnagh (W202842), u/s Clydagh Bridge (W114826) and

Knocknagowan (W187837), April, May 1978 and October 1978 to March 1979 (Ashe, 1982). R. Flesk, d/s Clydagh/Loo confluence (W084814), d/s Whitebridge (V987900), u/s Newbridge (V978900), 4 May 1973, DAM (Douglas and Murray, 1980); d/s New Bridge (V963885) and u/s L. Leane (V964894), April and May 1978, October 1978 to March 1979 (Ashe, 1982). R. Torc upper course, Torc Mountain, Killarney (V959830) and above waterfall (V964835), 1973 (Douglas and Murray, 1980). **MAYO: HA 32 -** L. Fin, Delphi (L841657), 9 May 2006, EPA (DAM). R. Altahoney, Newport (F950050), 1972, EF (DAM); R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). Stream at "Archeological site 9", Murrisk (L908824), 7 May 2004, DAM/WM (DAM). Seashore at outflow of stream, Killary (L869694), 5 June 2002, DAM/WM (DAM)**: HA 33 -** stream at Pollranny Sweeney, Achill mainland (L755997), 6 May 2004, DAM/WM (DAM)**: HA 34 -** R. Moy tributary, north of Cloonacool (G495199), 22 April 2004, JRB (DAM). **WEXFORD: HA 12 -** R. Bannr, west of Coolgreany (T128713), 7 April 2004, JRB (DAM). **WICKLOW: HA 10 -** R. Glencullen (Glencullen R.), Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989).

***Orthocladius* (*Orthocladius*) *dentifer* Brundin, 1947**

CLARE: HA 27 - L. Bunny, Aughrim, south east shore (R377965), 6 April 2006 (EPA). Gortglass L., Killadysert, south shore (R223596), 7 July 2009, EPA (DAM)**: HA 28 -** R. Caher, 2.5km from source, Holywell (M173069), 27 October 1999, CB (DAM). **CORK: HA 21 -** L. Bofinna, Bantry (W041488), 11 September 2008, EPA (DAM). **DERRY: HA 2 -** fire dam, Binevenagh Forest, Coleraine (C699304), 18 May 2000 (Langton, 2002). **DONEGAL: HA 36 -** L. Avehy, Belalt (H043664), 28 March 2004 (PHL)**: HA 37 -** L. Shinvagh, Carricode (H005675), 27 April 2002 and 27 March 2004 and stream inflow to L. Shinvagh, Carricode (H005673), 27 March 2004 (PHL). **DOWN: HA 3 -** Glenaveagh stream, Glenaveagh Bridge (J255284), 26 September 1997 (PHL). **GALWAY: HA 31 -** L. Ahalia, Maam Cross, north east shore (L971402), 18 June and 23 September 2009, EPA (DAM). **KERRY: HA 21 -** L. Brin, Derreeny (V780775), 10 September 2008, EPA (DAM). **MAYO: HA 32 -** L. Fin, Delphi (L841657), 9 May 2006, EPA (DAM)**: Clare Island -** R. Dorree, 100m above sea, Maum (L708865), 28 April 2000 (Murray and Murray, 2003). **WESTMEATH: HA 25 -** L. Ennell, Mullingar, Tudenham (N378444), 29 June 1966, DAM (Murray and Ashe, 1983-det. P.S. Cranston, BNMH)

***Orthocladius* (*Orthocladius*) *glabripennis* (Goetghebuer, 1921)**

CLARE: HA 25 - L. Graney (R568907), 24 May 2003 (Langton, 2004) and L. Graney, Doorus, west shore (R556930), 4 May 2006, EPA (DAM)**: HA 28 -** L. Lickeen, Kilfenora (R175909), 3 May 2006, EPA (DAM). **DERRY: HA 3 -** pond near R. Macquosin, Ballytinagh Road,

Coleraine (C854255), 18 April 2004 (PHL). **DONEGAL: HA 38 -** L. Salt, Milford (C121256), 16 June 2009, EPA (DAM). **GALWAY: HA 25 -** L. Derg, Woodford (M794964), 23 May 2003 (Langton, 2004). **LAOIS: HA 15 -** R. Tonet, Monnagh, Coolrain (S265927), 29 April 1999, CB (PJA/NMI). **LEITRIM: HA 26 -** L. Boderg, Derrycarne, north west shore (N013915), 14 May 2008, EPA (DAM). **MAYO: HA 32 -** L. Doo, Delphi, north east shore (L834689), 22 August 2002, DAM/WM (DAM)**: HA 34 -** L. Conn, west shore (G165144), 15 April 2008, EPA (DAM). **TIPPERARY: HA 16 -** Black R., Two-Mile-Boris (S192578), 22 May 1992 and R. Suir, Rossestown Bridge (S134624), 6 July 1992 (Murray and Lynch, 1992).

[Langton (2004) provided the first published records for Ireland from L. Graney and L. Derg (HA 25) from material collected in May 2003. Earlier unpublished records exist from HA 15 (April 1999), HA 16 (May 1992) and HA 32 (August 2002].

***Orthocladius* (*Orthocladius*) *oblidens* (Walker, 1856)**

ANTRIM: HA 3 - L. Neagh: Antrim Bay (J135866), 4 May 1999 and 22 August 2001; Churchtown Point (J056852), 13 October 2000, 22 August 2001, 22 and 31 May 2011 (all PHL)**: HA 5 -** L. Mourne, Carrickfergus (J415924), 7 April 2012 (PHL). **ARMAGH: HA 3 -** R. Closet, Derrymacash Bridge, Portadown (J044595), April 1956, CFH (CFH, slide collection). **CAVAN: HA 36 -** R. Erne, Kilsarin (N362910), 27 May 1982 (Hayes, 1991). **CLARE: HA 25 -** L. Derg: Terryglass (M861008), 20 April 2009; d/s Killaloe (M705715), 21 April, 17 June and 18 September 2009, EPA (DAM). L. Graney (R568907), 24 May 2003 (PHL) and west shore (R553938), 15 June 2009, EPA (DAM)**: HA 28 -** L. Doo, Milltown Malbay (R123721), 1 April 2009, EPA (DAM). R. Annageeragh, Moyglass Bridge, d/s L. Doo (R078725), R. Creegh, Mountrivers Bridge, Doonbeg (Q991659) and R. Doonbeg, Derryard (Q979644), 30 July 1982 (Hayes, 1991). **CORK: HA 18 -** R. Blackwater: Duncannon (W180931), Keale Bridge, Millstreet (W294936) 2 September 1981 and Ballymacquirk Bridge, Banteer (W382989), Roskeen Bridge, Banteer (W444988) and Lombardstown (W463968), 1 September 1981 also Killavullen (W648998), 31 August 1981 (Hayes, 1991)**: HA 20 -** R. Ilen, Drimoleague (W098454) and Hollybrook (W117363), 24 August 1983 (Hayes, 1991). **DERRY: HA 1 -** inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 26 April 2001 (PHL)**: HA 2 -** R. Ballykelly tributary, Siskatreel Bridge, Clagan (C628209), 9 June 2000 (PHL)**: HA 3 -** Downhill beach stream, Coleraine (C754326) and Balinrees Reservoir, Coleraine (C794300), 9 June 2000 (PHL). R. Macosquin, Black Bridge, Ballylintagh (C854256), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 18 June 1999, 25 May, 7 June, 13 June and 16 July 2000, 27 April 2001 and 24 August 2012 (PHL). L. Neagh, Ballyronan (H948862), 27 April 1999 (PHL), 10 May 2000 (PHL), 4 July 2000 (Langton, 2002), 13 October 2000, 22 August 2001, 15 May 2002, 8 October 2006 and 22 May 2011 (PHL). R. Moyola, New Bridge,

Magherafelt (H955905), 4 July 2000 (PHL). **DONEGAL: HA 36 -** L. Avehy, Belalt (H043664), 28 March 2004 (PHL)**: HA 38 -** L. Salt, Milford (C121256), 7 April 2009, EPA (DAM)**: HA 39 -** R. Leannan, Drumaboden (C165218), 12 August 1982 and R. Crana, Buncrana (C347328), 15 August 1982 (Hayes, 1991)**: HA 40 -** R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991). **DUBLIN: HA 9 -** R. Dodder, Fort Bridge, Bohernabreena (O009242), 2 April 1946 (Fitzgerald, 1947) and 21 June 1966 (DAM). **FERMANAGH: HA 35 -** L. Melvin, Garrison (G938518), 29 June 2000 (Langton, 2002)**: HA 36 -** L. Erne, Lower, Boa Island (H108626), 29 June 2000 (Langton, 2002); L. Erne, Lower, Black Bay (H072639), 27 April 2002 and 22 March 2003 (PHL). **GALWAY: HA 25 -** L. Derg, Woodford (M794964), 24 May 2003 (PHL)**: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 and R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991)**: HA 29 -** L. Rea, east shore, Loughrea (M624153), 25 May 2003 (PHL) and L. Rea (M615154), 12 April and 18 September 2007, EPA (DAM)**: HA 30 -** L. Corrib Lower, Moycullen (M271360), 11 April 2007, EPA (DAM). R. Cregg, Addergsole Bridge (M324350) and R. Grange, Grange Bridge (M428498), 16 August 1981 (Hayes, 1991). **KERRY: HA 18 -** R. Blackwater, Lacknastooka (R153008), 2 September 1981 (Hayes, 1991)**: HA 22 -** L. Doo (Doolough), Muckross Penninsula (V949860), 3 July 1973 (Douglas and Murray, 1980). L. Leane, Killarney (V931886), 22 April and 24 June 2008, EPA (DAM). Muckross Lake, Dundag Bay (V964858), 1973 (Douglas and Murray, 1980); Muckross Lake, Killarney (V950853), 24 April and 18 September 2008, EPA (DAM). R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). **KILDARE: HA 7 -** R. Boyne, Edenderry (N636346) and Ballyboggan (N639402), 9 July 1981 (Hayes, 1991)**: HA 9 -** R. Liffey, Straffan Bridge (N924293), 1929, WEF (Humphries and Frost, 1937) and Sallins (N881245), 17 July 1983 (Hayes, 1991). R. Rye, Leixlip (N933370), 3 January 1968 (Murray, 1972). **KILKENNY: HA 15 -** R. Nore, Threecastles (S458626), 27 August 1981, Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Kilbricken (S362898), Shanahoe Bridge (S407858) and Athanagh (S423763), 28 August 1981 (Hayes, 1991). **LEITRIM: HA 26 -** L. Allen, Mountallen, Drumshanbo (G950145), 28 April 2008, EPA (DAM). L. Boderg, Derrycarne, north west shore (N013915), 14 May 2008, EPA (DAM). L. Bofin, Dromod (N049894), 10 April and 10 September 2008, EPA (DAM)**: HA 35 -** L. Glencar, Glencar (G748434), 1 April and 2 September 2008, EPA (DAM). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514), d/s Cappamore (R779504) and Dromkeen Bridge (R741480), 8 September 1981 (Hayes, 1991). **LONGFORD: HA 26 -** L. Forbes, Cloonard, Newtownforbes (N084821), 25 June and 10 September 2008, EPA (DAM). **MAYO: HA 26 -** L. Nanoge, Urlaur (M506903), 24 April 2008, EPA (DAM)**: HA 30 -** L. Mask, west shore, Toormakeady (M113702), 24 June and 22 September 2008, EPA (DAM)**: HA 32 -** R. Erriff, Ashleigh Falls

(L895645), 18 August 1981 (Hayes, 1991). L. Knappabeg, Westport (M010803), 23 July 2008, EPA (DAM)**: HA 33 -** R. Owenmore, Bangor Erris (F863228), 18 August 1983 (Hayes, 1991)**: HA 34 -** L. Conn, west shore (G165144), 15 April 2008 and south basin, Illannaglashy (G207070), 20 August 2008, EPA (DAM). L. Levally, Massbrook (G146043), 22 April and 23 September 2008, EPA (DAM). L. Washpool, Ballycarra (M219842), 23 April 2008, EPA (DAM). R. Moy, Bellanacurra (G403047), 29 August 1982 and Cloongullaun (G348016), 30 August 1982 (Hayes, 1991)**: Clare Island -** Creggan L., Lecarrow (L689857), 11 June 1998, SF (det. DAM/NMI). Loughnapucar stream (L658848), 21 August 2002, DAM/WM (Murray and Murray, 2003). **MEATH: HA 6 -** R. Dee, Drumconrath (N910894), 27 July 1983 (Hayes, 1991)**: HA 7 -** R. Boyne: Scarrif Bridge (N733527) and Newtown, Trim (N815571), 9 July 1981 (Hayes, 1991); Ardsallagh, at St Bridget's Well (N897635), 7 July 1988; Kilcarn Bridge, Navan (N884657), 21 August 1988 (Murray, 1988); Stackallen Bridge (N918713), 12 July 1981 (Hayes, 1991) and 17 August 1988 (Murray, 1988). R. Blackwater, Bloomsbury Bridge, Oristown (N793741) and Donaghpatrick (N819723), 19 August 1988 and Poolboy Bridge, Navan (N871681), 18 August 1988 (Murray, 1988)**: HA 8 -** R. Nanny, road bridge u/s Duleek (O035655), 6 June 2006, DAM/WM (DAM). **MONAGHAN: HA 36 -** L. Drumlona, Rockcorry (H636176), 4 April 2007, EPA (DAM). **OFFALY: HA 25 -** R. Little Brosna, Ryan's Cross Bridge (S053882), Milltown Park (S068907), Brosna Bridge (S077938), Sharavogue (S056953), New Bridge (N016088), 2 September 1982 and R. Brosna, Cloghan (M046209), 2 September 1982 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck: Castlecoote (M809627) and Ballyforan (M817464), 16 July 1981; Athleague (M825758) and Mount Talbot (M813531), 14 August 1981 (all Hayes, 1991). L. Cavetown, Boyle (M832974), 9 April 2008, EPA (DAM). L. Ree, Yew Point, Barley Harbour (N018485), 10 and 11 September 2007, EPA (DAM). **SLIGO: HA 26 -** L. Gara, Monastredan (M708996), 28 April 2008, EPA (DAM)**: HA 34 -** L. Talt, Gleneask (G402151), 10 April 2008, EPA (DAM). R. Moy, Cloonacool (G493168), Metal Bridge, Tobercurry (G464138) and Annagh (G466123), 30 August 1982 (Hayes, 1991)**: HA 35 -** L. Arrow, Ballinafad (G789123), 11 June 2008, EPA (DAM). L. Gill, Sligo (G753335), 3 April, 11 June and 8 September 2008, EPA (DAM). R. Drumcliff, Glencar (G734430), 19 August 1983 (Hayes, 1991). **TIPPERARY: HA 15 -** R. Nore, Clonakenny (S116805), Nore Bridge (S133816) and Quaker Bridge (S211868), 27 August 1981 (Hayes, 1991)**: HA 16 -** R. Breagagh, Archerstown Bridge (S140568), 22 May 1992 (Murray and Lynch, 1992). R. Drish, Castletown (S207634), 6 July 1992 (Murray and Lynch, 1992). R. Suir, Rossestown Bridge (S134624), 6 July 1992; d/s Thurles (S128581), 22 May 1992 and 6 July 1992 (all Murray, 2005); R. Suir, Forte Edward, Cashel (S052458), 19 May 1999, CB (PJA/NMI). **TYRONE: HA 3 -** L. Neagh, Washing Bay, Coalisland (H903662), 15 and 30 May 2002 (PHL). **WATERFORD: HA 18 -** R. Blackwater, Ballyduff (W964992), 31 August 1981 (Hayes,

1991). **WESTMEATH: HA 25 -** L. Ennell, Tudenham (N415466), 5 May 1967 (Murray, 1972)**: HA 26** - L. Killinure, Wineport (N067458), 24 April 2007, EPA (DAM); L. Killinure, Ballaghkeernan Bay (N069445), 11 September 2007, EPA (DAM). L. Derravaragh, Crookedwood (N468634), 30 August 2007, EPA (DAM). **WEXFORD: HA 11 -** R. Ounvarra, Ballycanew (T153519), 6 May 2006, DAM/WM (DAM)**: HA 12 -** R. Slaney, Clomahon (S933534), 29 July 1981 (Hayes, 1991). **WICKLOW: HA 10 -** R. Glencullen (Glencullen R.), Knocksink (O218180), 10 April 1987 (Murray, 2005)**: HA 12 -** R. Slaney, Stratford Bridge (S895930), 28 July 1981 (Hayes, 1991).

***Orthocladius* (*Orthocladius*) *obumbratus* sensu Langton and Visser, 2003**

Palaearctic records of the Nearctic *O.* (*O.*) *obumbratus* Johannsen are regarded as doubtful (Spies and Sæther, 2004; Ashe and O'Connor, 2012). The records presented here represent a distinct morphotype and are based on pupal exuviae identified from Langton and Visser (2003) and Langton (1992). Records pre-dating 1992 by Hayes had been determined as *Orthocladius* pe9 from the earlier work of Langton (1984).

DERRY: HA 3 - R. Bann, Coleraine (C854304), 7 April 2002 (PHL). **GALWAY: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 (Hayes, 1991). R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991). **KERRY: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). **MEATH: HA 7 -** Yellow R., tributary to R. Blackwater, Randalstown, Navan (N835710), 10 May 1995 (Murray, 2005). **ROSCOMMON: HA 26 -** R. Suck, Ballyforan (M817464), 5 April 1982 (Hayes, 1991; Murray, 2005). **SLIGO: HA 35 -** L. Gill, Sligo (G753335), 3 April 2008, EPA (DAM). **TIPPERARY: HA 16 -** R. Suir, Rossestown Bridge (S134624), 6 July 1992 (Murray and Lynch, 1992). **WICKLOW: HA 10 -** R. Glencullen, Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989).

***Orthocladius* (*Orthocladius*) *pedestris* Kieffer, 1909**

ANTRIM: HA 3 - L. Neagh, Antrim Bay (J135866), 4 May 1999 and 17 March 2000 (Langton, 2002) also 28 March 2001 (PHL); Churchtown Point (J056852), 22 May 2011 (PHL). R. Sixmilewater, Templepatrick (J227867), 4 May 1999 (PHL)**: HA 5 -** Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **DERRY: HA 1 -** pool by Creggan Reservoir, Derry (C414171), 17 May 2002 (PHL); inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 18 May 2001 and 17 May 2002 (PHL)**: HA 2 -** R. Bessbrook, Limavady (C655212), R. Roe, Deerpark Wood, Limavaddy (C682203) and R. Curly, Artikelly Bridge, Limavady (C684247), 9 June 2000 (Langton, 2002)**: HA 3 -** Downhill beach stream, Coleraine (C754326), 9 June 2000 (Langton, 2002). Downhill Lake, Downhill Forest, Coleraine (C757354), 7 March 1999 (PHL). Balinrees Reservoir, Coleraine (C794300), 20 March 1999 (PHL) and 9 June 2000

(Langton, 2002). R. Agivey, Garvagh (C838154), 30 May 2002 (PHL). R. Aghadowey, Ballybritain Bridge (C859212) and R. Macosquin, Black Bridge, Ballylintagh (C854256), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 13 and 20 May 1999, 3 and 17 May 2000, 26 April 2001, 11, 18 and 25 April 2010 (PHL). R. Agivey, Glascort Bridge (C907226), 16 July 2000 (Langton, 2002). L. Neagh, Ballyronan (H948862), 4 May 1999 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 7 May 2001 (PHL). **DONEGAL: HA 36 -** L. Unshin, Ballyshannon (G946634), 9 June 2009 (PHL)**: HA 37 -** L. Shinvagh, Carricode (H005675), 28 March 2004 and L. Narath (G944670), 27 March 2004 (PHL)**: HA 39 -** L. Fern, Millford (C180233), 2 April 2009 (DAM). **DOWN: HA 3 -** R. Leitrim, Leitrim Bridge, Hilltown (J217285), 27 March 1998 (PHL). **DUBLIN: HA 9 -** R. Dodder: Fort Bridge, Bohernabreena (O009242), 24 April 1946, MG (DAM). R. Dodder; Ballsbridge (O180330), 27 February 1949; u/s Donnybrook (O177312) 29 November 1948, 11 March 1949 and 27 May 1949, also at Milltown (O168303) 17 January 1949, all Reilly (1951). **FERMANAGH: HA 35 -** L. Melvin, Garrison (G938518), 29 June 2000 (Langton, 2002)**: HA 36 -** Dummys L., Magheraveely (H488276), 28 June 2000 (Langton, 2002). L. Erne, Lower, Black Bay (H072639), 27 April 2002 (PHL). L. Keenaghan, Beleek (G974600), 28 March 2004 (PHL). R. Colebrook tributary, Tullyweel, Fivemiletown (H416474), 23 April 1998 (PHL); R. Colebrook, Mullaghfad (H510408), 4 June 1997 (PHL). **GALWAY: HA 25 -** L. Derg, Woodford (M794964), 24 May 2003 (PHL)**: HA 31 -** L. Ballynahinch, Ballynahinch (L777478), 6 June 2007, EPA (DAM). **KERRY: HA 22 -** R. Annascaul, Annascaul (Q593017), 21 July 1981 (Hayes, 1991 - sub *Orthocladius* Pe10, sensu Langton, 1984; Murray, 1996, 2005). R. Caragh, Lower Brida Valley (V740805), d/s Owenroe R. confluence (V720815), Bealalaw Bridge (V715832) and Blackstones Bridge, d/s R. Acoose confluence (V710864), 1975, CD (all Dowling *et al.*, 1981). **MEATH: HA 8 -** R. Nanny, road bridge u/s Duleek (O035655), 6 June 2006, DAM/WM (DAM). **TYRONE: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WICKLOW: HA 10 -** R. Glencullen, Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989).

***Orthocladius* (*Orthocladius*) *rhyacobius* Kieffer, 1911**

DERRY: **HA 3 -** L. Neagh (H9080), no date, anon. (McLarnon and Carter, 2000). **KERRY: HA 22 -** L. Leane, Killarney, Muckross Boathouse (V965866), 29 August 1987, NOM (LJH; Murray, 2005). **MAYO: HA 32 -** R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972).

***Orthocladius* (*Orthocladius*) *rivinus* Potthast, 1914**

ANTRIM: HA 4 - R. Bush, Conogher Bridge (C963305), 10 September 2000 (Langton, 2002).

Altnahinch Reservoir, Ballymoney (D120234), 22 August 2001 (PHL). **CAVAN: HA 7 -** L. Acurry, Baileborough (N584990), 5 April 2007, EPA (DAM). **CLARE: HA 25 -** L. Graney, Drumandora, west shore (R553938), 15 June 2009, EPA (DAM). L. Alewnaghta, Whitegate, west shore (R758908), 20 April 2009, EPA (DAM)**: HA 27 -** L. Muckanagh, Tubber, Corrofin (R368926), 3 April 2006 (EPA)**: HA 28 -** L. Doo, Milltown Malbay, north west shore (R113722), 11 June and 8 July 2009, EPA (DAM). **DERRY: HA 3 -** L. Fea, Draperstown (H760868), 15 May 2002 (PHL). **DONEGAL: HA 1 -** L. Finn, Fintown, Glenties (B911018), 9 June 2009, EPA (DAM)**: HA 38 -** L. Keel, Kilmacrennan (C158243), 2 April 2009, EPA (DAM)**: HA 39 -** L. Akibbon, Church Hill (C068184), 23 April and 9 September 2009, EPA (DAM). **DUBLIN: HA 9 -** Upper Reservoir, Bohernabreena, 9 May 1947 (Fitzgerald, 1947). **FERMANAGH: HA 36 -** L. Erne Lower, Black Bay (H072639), 27 April 2002 and 22 March 2003 (PHL). **GALWAY: HA 29 -** L. Rea, Loughrea (M615154), 12 April 2007, EPA (DAM)**: HA 30 -** L. Beaghcauneen, Ballinaboy (L679470), 5 April 2007, EPA (DAM)**: HA 32 -** L. Ballynakill, Cleggan (L639581), 3 April 2007, EPA (DAM). L. Kylemore, Letterfrack (L771582), 2 April 2007, EPA (DAM). **KERRY: HA 22 -** L. Guitane, Crohane, Killarney (W025846), 21 April and 9 September 2008, EPA (DAM). **MAYO: HA 30 -** L. Mask, west shore, Toormakeady (M097647), 14 April 2008, EPA (DAM)**: HA 32 -** L. Doo, Delphi, west shore (L835681), 12 July 2006, EPA (DAM). L. Fin, Delphi (L841657), 5 April and 9 May 2006, EPA (DAM). L. Ballin, Westport (L994878), 22 April 2008, EPA (DAM)**: HA 33 -** L. Carrowmore, Bangor Erris, Cloontakilla (F851253), 17 June 2008, EPA (DAM)**: HA 34 -** L. Cullin, Drummon Wood (G229028), 15 April 2008, EPA (DAM). **MONAGHAN: HA 36 -** L. Annaghmakerrig, Newbliss (H585205), 25 April 2006, EPA (DAM). **ROSCOMMON: HA 26 -** L. Urlar, north east shore (at Abbey) (M508900), 10 March 2005, DAM/WM (DAM). L. Ree, Yew Point, Barley Harbour (N018485), 11 September 2007, EPA (DAM). **SLIGO: HA 35 -** L. Arrow, Ballinafad (G789123), 11 June 2008, EPA (DAM). Kilsallagh Reservoir, Kilsallagh (G734393), 2 April 2008, EPA (DAM). **WESTMEATH: HA 7 -** L. Lene (N510685), 26 April 2006, EPA (DAM)**: HA 36 -** L. Bane, Collinstown (N550712), 26 April, 23 May and 26 June 2006 (EPA). **WEXFORD: HA 12 -** R. Slaney, Clomahon (S933534), 29 July 1981 (Hayes, 1991 - sub *Orthocladius* Pe3, sensu Langton, 1984; Murray, 1996, 2005); Ballycarney (S967488), 29 July 1981 (Hayes, 1991). **WICKLOW: HA 10 -** R. Glencullen, Knocksink (O218180), 18 March 1987, DEM/DAM (Morgan, 1989; Murray, 1996).

***Orthocladius* (*Orthocladius*) *rubicundus* (Meigen, 1818)**

ANTRIM: HA 3 - R. Clogh, Clough Mills (D105109), 2 July 2000 (Langton, 2002). L. Neagh, Antrim Bay (J135866), 17 March 2000 and 20 March 2001 (PHL). R. Main, Randalstown (J084904), 13 October 2000 and R. Kells, Shank Bridge, Kells (J126982), 20 June 2000

(Langton, 2002). R. Sixmilewater, Templepatrick (J227867), 4 May 1999 (PHL). Killylane Reservoir, Magherabane, Larne (J292985), 4 and 8 May 1999 (PHL). Glen Burn, Lower Glen Bridge (J263994), 4 May 1999 (PHL)**: HA 4 -** R. Bush, Stranocum (D009307) and Ballyhoe Bridge (D077294), 2 July 2000, Conogher Bridge (C963305), 10 September 2000 (Langton, 2002). R. Brymore, Brymore Bridge (D162275), R. Glendun, Drumfresky, Cushendun (D193308) and R. Glenariff (Inver/Glenariff), Cushendall (D215205), 2 July 2000 (all Langton, 2002). Altnahinch Reservoir, Ballymoney (D120234), 22 August 2001 (PHL)**: HA 5 -** Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **CARLOW: HA 12 -** R. Slaney: Rathvilly (S877823), 29 July 1981, Motabower Bridge (S832778) and Kildavin (S899597), 28 July 1981 (Hayes, 1991). **CAVAN: HA 36 -** R. Erne, Drumbarry (N462951), 17 August 1982 (Hayes, 1991). **CLARE: HA 25 -** L. Graney, Doorus, west shore (R556930), 8 June 2006, EPA (DAM). L. Atedaun, Corrofin (R297884), 21 April and 16 June 2009, EPA (DAM)**: HA 28 -** R. Annageeragh, Moyglass Bridge, d/s L. Doo (R078725), 30 July 1982 (Hayes, 1991). R. Caher: 2.5km from source, Holywell (M173069), 27 October 1999 and 29 April 2000; 5km from source, Murroogh (M153089), 27 October 1999 and 29 April 2000, CB (all Kelly-Quinn *et al.*, 2003). R. Creegh, Mountrivers Bridge, Doonbeg (Q991659) and R. Doonbeg, Derryard (Q979644), 30 July 1982 (Hayes, 1991). **CORK: HA 18 -** R. Blackwater, Knocknagree (W159975) and Charles Bridge, Millstreet (W248943), 2 September 1981 (Hayes, 1991)**: HA 19 -** Carrigdroihid Reservoir, Ashton (W360703), 3 April 2008, EPA (DAM). Cruppoge stream, south east of Kilcorney (W367851), 16 April 2004, JRB (DAM)**: HA 20 -** R. Bandon: Long Bridge, Dunmanway (W242631), 18 April to 30 June and 25 September 1980; Bealabouy Bridge, Dunmanway (W257514), 20 February to 18 April 1980 also 25 August and 25 September 1980; u/s Ballineen (W331537), 20 March to 30 June, 25 September and 31 October 1980; Ballineen Bridge (W434538), 20 February to 30 June, 25 September and 31 October 1980, 17 January 1981; Castle Bernard (u/s Bandon) (W472546), 20 March to May 1980, 25 September 1980 to 17 January 1981; 2.5km d/s Bandon (W516569), 20 February to 30 June, 25 August to 28 November 1980 (all Morgan, 1982). R. Ilen, Madore (W103419) and Hollybrook (W117363) and R. Ovane, Pierson's Bridge (W023454), 24 August 1983 (Hayes, 1991). **DERRY: HA 2 -** R. Bessbrook, Limavady (C655212), 9 June 2000 (Langton, 2002). R. Roe, Deerpark Wood, Limavaddy (C682203), 9 June 2000; R. Roe, Largy Bridge, Limavaddy (C681202), 14 July 2000 (Langton, 2002). R. Curly, Artikelly Bridge, Limavady (C684247), 9 June 2000 (Langton, 2002). Fire dam, Binevenagh Forest, Coleraine (C699304), 18 May 2000 (Langton, 2002). R. Castle, Ardmore Bridge, Limavady (C706207), 9 June 2000 and burn at Largantea picnic area, Formoyle, Coleraine (C738287), 9 June 2000 (Langton, 2002)**: HA 3 -** Downhill beach stream, Coleraine (C754326) and Balinrees Reservoir, Coleraine (C794300), 9 June 2000 (Langton, 2002). R. Agivey, Garvagh (C838154), 30 May 2002 (PHL). R.

Aghadowey, Ballybritain Bridge (C859212), 26 May 2000 (Langton, 2002). R. Macosquin, Black Bridge, Ballylintagh (C854256), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 12 April to1 October 1999, 19 February to 3 July 2000 and 8 October 2000, 26 April and 16 June 2001, 22 September 2002, 11 April to 2 May 2010, 27 July to 24 August 2012 (PHL). R. Agivey, Glascort Bridge (C907226), 16 July 2000 (Langton, 2002). L. Neagh, Ballyronan (H948862), 4 July 2000 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 4 July 2000 (Langton, 2002) also 7 May 2001 and 8 October 2006 (PHL). **DONEGAL: HA 1 -** R. Deele, Legland, Raphoe (C136028), 19 July 2000 (Langton, 2002)**: HA 38 -** R. Devlin, Dunlewy (B927190), 19 July 2000 (Langton, 2002). L. Slieve Snaght, Glenveagh (B933153), 4 June 1986, LJH (DAM). R. Owencarrow, d/s road bridge, Glenveagh (C043235), 18 July 2000 (Langton, 2002)**: HA 39 -** L. Akibbon, Church Hill (C068184), 23 April 2009, EPA (DAM). **DOWN: HA 3 -** Upper R. Bann tributary, Dooghary (J137443), 29 May 1997 (PHL); Upper R. Bann, Hilltown (J238288), 29 May 1998 (PHL). R. Shanky, left fork, Hilltown (J221243) and R. Shanky, Batts Bridge, Hilltown (J226257), 29 May 1998 (PHL). R. Rocky (d/s R. Shanky confluence), Hilltown (J233277), 26 September 1997 and 25 September 1998 (PHL). R. Kinnahalla, Hilltown (J239292), 29 May 1998 (PHL). **DUBLIN: HA 9 -** R. Dodder, Bohernabreena aqueduct 1 (O101208), 22 July 1968; Pussy's Leap, Templeogue (O126281), 22 July 1968; Firhouse (O104274), 16 July 1966 and Landsdown Road Bridge (O180327), 18 July 1967 (all Murray, 1972); Milltown (O168303), 14 May 1946 (Grey, 1946); u/s Donnybrook (O177312), 27 May 1949 (Reilly, 1951). Upper Reservoir, Bohernabreena (O095219), 14 April 1947 (Fitzgerald, 1947). **FERMANAGH: HA 35 -** L. Melvin, Garrison (G938518), 29 June 2000 (Langton, 2002)**: HA 36 -** R. Finn, Lisnanesnagh Bridge (H544337), 26 June 2000. R. Hollybrook, Lisnaskea (H373310), 27 June 2000 and R. Sruh Croppa, Cuilcagh Mountains (H111329), 29 June 2000 (all Langton, 2002). R. Colebrook, Mullaghfad (H510408), 4 June 1997 (PHL); R. Colebrook tributary, Corlough (H416416), 27 June 1997 (PHL). **GALWAY: HA 25 -** L. Derg, Woodford (M794964) and R. Woodford, bridge on R351, Woodford (M732000), 24 May 2003 (PHL)**: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 and R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991)**: HA 30 -** R. Cregg, Addergsole Bridge (M324350) and R. Grange, Grange Bridge (M428498), 16 August 1981 (Hayes, 1991). R. Owenriff, Oughterard (M112426), 24 May 2003 (PHL)**: HA 31 -** L. Derryclare, Recess (L825485), 17 April 2007, EPA (DAM). L. Nahasleam, Maam Cross (L972440), 16 May 2006, EPA (DAM)**: HA 32 -** R. Owenglin, Clifden (L677506) and R. Dawros, Tullywee Bridge, Letterfrack (L730586), 18 August 1981, BPH (Hayes, 1991). **KERRY: HA 18 -** R. Blackwater, Lacknastooka (R153008), 2 September 1981, BPH (Hayes, 1991)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981, BPH (Murray, 2005). R. Caragh, Bealalaw Bridge (V715832), 25 October 1999, CB (PAJ/NMI). R. Flesk, d/s

Whitebridge (V987900), November 1978 (Ashe, 1982); R. Flesk, d/s Whitebridge (V987900), 20 March 1979, PJA (Murray, 2005) and May 1979 (Ashe, 1982). **KILDARE: HA 9 -** R. Liffey, Sallins (N881245), 17 July 1983 (Hayes, 1991); R. Liffey, Straffan Bridge (N924293), 1929, WEF (Humphries and Frost, 1937) and 15 July 1983 (Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Castletown Bridge (S326930), 27 August 1981 (Hayes, 1991). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514), d/s Cappamore (R779504), 8 September 1981 and Dromkeen Bridge (R741480), 8 September 1981 (Hayes, 1991). **MAYO: HA 30 -** L. Mask, west shore, Toormakeady (M097647), 14 April 2008, EPA (DAM)**: HA 32 -** L. Doo, Delphi, north east shore (L834689), 22 August 2002, DAM/WM (DAM) and west shore (L833680), 25 August 2008, EPA (DAM). R. Carrowinsky, u/s bridge, Killeen, Carrowinskey (L770773), 5 August 2004, DAM/WM (DAM). R. Burleemslough, Clapper Bridge Ford (u/s Roonagh L.), Killeen, Cloonlaur (L754759), 5 August 2004, DAM/WM (DAM). R. Bunowen, Louisburg, u/s of bridge (L807807), 7 May, 5 August and 30 September 2004, DAM/WM (DAM). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). L. Feeagh, Newport (L975983), 25 June 2008, EPA (DAM). Stream at "Archeological site 9", Murrisk (L908824) and Westport L., Westport Woods Hotel (L985843), 7 May 2004, DAM/WM (DAM). R. Owenduff, bridge on N59 south of Killary (L810595), 9 May 2003, DAM/WM (DAM). Seashore at outflow of stream, Killary (L869694), 5 June 2002, DAM/WM (DAM)**: HA 33 -** R. Owenmore, Bangor Erris (F863228), 18 August 1983 (Hayes, 1991)**: HA 34 -** R. Moy, Cloongullaun (G348016), 30 August 1982 and Ballylahan (M227992), 29 August 1982 (Hayes, 1991). **MEATH: HA 7 -** R. Deel, Drumcree (N558650), 21 June 1991, MB (DAM). R. Kinnegad, Kinnegad (N601448), June 1989 (Murray and Lynch, 1991). R. Boyne: Scarrif Bridge (N733527), June 1989 (Murray and Lynch, 1991); Bellinter Bridge (N894625), 21 May 1968 (Murray, 1972) and 21 August 1988 (Murray 1988); Ardsallagh, at St Bridget's Well (N897635), 7 July 1988 (Murray, 1988); Kilcarn Bridge, Navan (N884657), 21 August 1988 (Murray, 1988); railway bridge, Navan (N874674), 5 July 2006 (DAM); New Bridge, Navan (N873679), 18 August 1988 (Murray, 1988); Stackallen Bridge (N917713), 17 August 1988 (Murray, 1988) and 19 July 1989 (Hayes, 1991); Slane Bridge (N965737), 19 July 1989 (DAM); Knowth Weir (N995720), 19 July 1989 (DAM). R. Blackwater, Bloomsbury Bridge, Oristown (N793741) and Donaghpatrick (N819723), 19 August 1988 (Murray, 1988) and Poolboy Bridge, Navan (N871681), 18 August 1988 (Murray, 1988). Yellow R., tributary to R. Blackwater, Randalstown, Navan (N835710), 29 August 1995, LF/DAM (Finnegan, 1998)**: HA 8 -** R. Nanny, road bridge u/s Duleek (O035655), 6 June 2006 and road bridge at Duleek (O050683), 6 June 2006, DAM/WM (DAM). **OFFALY: HA 7 -** Yellow R., tributary to R. Boyne, Garr Bridge (N532370) and Sheep Bridge (N582387), June 1989 (Murray and Lynch, 1991)**: HA 25 -** R. Little Brosna, Milltown Park (S068907), Brosna Bridge (S077938) and New Bridge (N016088) also R.

Brosna, Cloghan (M046209), 2 September 1982 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck, Athleague (M825758) and Ballyforan (M817464), 16 July 1981 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168), Metal Bridge, Tobercurry (G464138) and Annagh (G466123), 30 August 1982 (Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430) and R. Easky, Easky (G377378), 19 August 1983 (Hayes, 1991). **TIPPERARY: HA 16 -** R. Drish, Castletown (S207634) and Athlummon Bridge (S177593), 22 May 1992 (Murray and Lynch, 1992). R. Suir, Rossestown Bridge (S134624) and Cabragh (S124562), 6 July 1992 (Murray and Lynch, 1992)**: HA 25 -** R. Kilmastulla, Kilmastulla Bridge (R728698), 3 September 1981 (Hayes, 1991). **TYRONE: HA 1 -** Dennet Stream, Essbeg Bridge, Lisnaskee (H384306), 27 June 2000 (Langton, 2002)**: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WATERFORD: HA 18 -** R. Blackwater, Lismore (X047988), 31 August 1981 (Hayes, 1991). **WEXFORD: HA 11 -** R. Ounvarra, Ballycanew (T153519), 6 May 2006, DAM/WM (DAM)**: HA 12 -** R. Boro, Dunamore Bridge, Enniscorthy (S963366) and R. Slaney, Ballycarney (S967488), 29 July 1981 (Hayes, 1991). R. Sow tributary, Garylough Mill, Screen (T076302), 6 May 2006, DAM/WM (DAM). **WICKLOW: HA 9 -** R. Liffey, Ballysmuttan Bridge (O157148), 1929, WEF (Humphries and Frost, 1937)**: HA 10 -** Glencullen R., Brockey (O169207), Glencullen Bridge (O192194), u/s Glencullen Bridge (O190195), 1970, KC (Clabby and Bracken, 1976) and Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989). R. Avonbeg, Meetings Bridge (T188831), 11 July 1997 and R. Avonmore, Lion Arch Bridge (T194833), 27 October 1997 (Curran, 2001). R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991) and 11 July 1997 (Curran, 2001); R. Avoca, Avoca Village (T203802), 11 July 1997, FC/DAM (Curran and Murray, 2001) and 27 October 1997, FC (Curran, 2001)**: HA 12 -** R. Derry, Balisland (S978645), R. Slaney, Knickeen, Glen of Imail (S987948) and Knockgarrigan, Glen of Imail (S936937), 28 July 1981 (Hayes, 1991).

***Orthocladius* (*Orthocladius*) *wetterensis* Brundin, 1956**

KERRY: HA 18 - R. Blackwater tributary, Gortacloghane, Mullaghanatin Mountain (V754744), 17 April 2004, JRB (DAM). **MEATH: HA 8 -** R. Nanny, road bridge u/s Duleek (O035655), 6 June 2006, DAM/WM (DAM). **TIPPERARY: HA 16 -** R. Drish, Castletown (S207634) and R. Suir, Rossestown Bridge (S134624), 6 July 1992, DAM/JL (Murray and Lynch, 1992). **WICKLOW: HA 10 -** Glencullen R., Knocksink (O218180), 18 May 1987 (Morgan, 1989 - sub *Orthocladius* Pe8, sensu Langton, 1984; Murray, 1996).

***Orthocladius* (*Pogonocladius*) *consobrinus* (Holmgren, 1869)**

ANTRIM: HA 5 - L. Mourne, Carrickfergus (J415924), 4 and 8 May 1999 (PHL). **CAVAN:**

HA 7 - L. Mullagh, Mullagh (N680856), July 1968 (DAM)**: HA 36 -** L. Annagh, Butler's Bridge (H394125), 18 September 2007, EPA (DAM). L. Garty, Arvagh (N278978), 7 June 2007, EPA (DAM). **CLARE: HA 25 -** L. Graney (R568907), 24 May 2003 (PHL) and Doorus, west shore (R556930), 4 May 2006, EPA (DAM). L. Alewnaghta, Whitegate, west shore (R758908), 20 April 2009, EPA (DAM)**: HA 27 -** L. Bridget, Derrymore, Badyke, east shore (R558797), 17 September 2009, EPA (DAM). Gortglass L., south shore, Killadysert (R223596), 2 April 2009, EPA (DAM). L. Inchiquin, Corrofin (R270895), 4 July 2006, west shore (R266896), 15 July 2009, south east shore (R272894), 16 June and 17 September 2009, EPA (DAM). L. Atedaun, Corrofin (R297884), 21 April and 14 July 2009 also north west shore (R294885), 16 June 2009, EPA (DAM)**: HA 28 -** L. Doo, Milltown Malbay (R123721), 8 July 2009, EPA (DAM). L. Lickeen, west shore, Kilfenora (R168909), 6 June and 2 August 2006, 6 April 2009, EPA (DAM). **CORK: HA 19 -** Carrigdroihid Reservoir, Ashton (W360703), 3 April and 16 September 2008, EPA (DAM)**: HA 20 -** L. Curraghalicky, Drinagh, Dunmanway (W234046), 17 June and 12 August 2008, EPA (DAM). **DERRY: HA 3 -** R. Bann, Coleraine (C854304), 18 March, 26 April, 18 June 1999, 19 February, 31 May, 7 June and 8 October 2000, 27 April 2001, 11 and 18 April 2010 (PHL). L. Neagh (H9080), no data (McLarnon and Carter, 2000). **DONEGAL: HA 36 -** L. Avehy, Belalt (H043664), 28 March 2004 (PHL)**: HA 37 -** L. Shinvagh, Carricode (H005675), 28 March 2004 (PHL)**: HA 38 -** L. Mulladerg, Rosses (B775199), 19 July 2000 (Langton, 2002). L. Anure, Loughanure, east shore (B818162), 17 June and 7 September 2009, EPA (DAM). L. Barra, Commeen (B935119), 22 April and 10 June 2009, EPA (DAM). L. An tSeisigh, Portnablagh (Sheephaven) (C043361), 1 April and 28 July 2009, EPA (DAM). L. Salt, Milford (C121256), 16 June 2009, EPA (DAM). L. Reelan, Reelan (C131272), 6 June 2009, EPA (DAM). L. Keel, Kilmacrennan (C158243), 16 June 2009, EPA (DAM). L. Shannagh, Magheradrumman, Fanad Penninsula (C216450), 21 July 2009, EPA (DAM)**: HA 39 -** L. Inshagh, Glenveagh (C031188), 20 May 1986 (Heneghan, 1986). L. Gartan, Church Hill (C055159), 22 July 2009, EPA (DAM). L. Akibbon, Church Hill (C068184), 11 June and 9 September 2009, EPA (DAM). L. Fern, Millford (C180233), 16 June and 23 July 2009, EPA (DAM). **DOWN: HA 5 -** L. Bow, Ballynahinch (J354577), 22 June 2000 (Langton, 2002). **DUBLIN: HA 9 -** Upper Reservoir, Bohernabreena (O095219), 26 November 1946, CFH and 14 April 1947 (Fitzgerald, 1947). **FERMANAGH: HA 36 -** L. Erne, Lower, Boa Island (H108626), 29 June 2000 (Langton, 2002) and 17 August 2011 (PHL); L. Erne, Lower, Black Bay (H072639), 27 July 2002 and Black Bay (H072639), 28 March 2004 (PHL). L. Lattone, Kiltyclogher (H003456), 29 June 2000 (Langton, 2002). L. Keenaghan, Beleek (G974600), 28 March 2004 (PHL). **GALWAY: HA 25 -** L. Derg, Woodford (M794964), 24 May 2003 (PHL)**: HA 29 -** L. Caherglassaun, Gort (M412061), 7 August 2007, EPA (DAM). Ballyturin L., Ballardiggan, Gort (M496005), 24 May 2003 (PHL)**: HA 30 -** L.

Anillaun, Maam Cross (L980470), 19 April 2007, EPA (DAM). L. Beaghcauneen, Ballinaboy (L679470), 5 April 2007, EPA (DAM). L. Bofin, Maam Cross (M040440), 26 January 1978, DAM (PJA). L. Corrib, Knockferry (M236415) and L. Corrib Lower, Hurney (M258310), April 1980, BC (DAM). L. Maumwee, Maam Cross (L977485), 12 July 2007, EPA (DAM). L. Ross, Moycullen (M200363), 25 May 2003 (PHL)**: HA 31 -** L. Shindilla, Derreennacreeva (L958460), 16 May 2006 EPA (DAM). L. Derryclare, Recess (L825485), 17 April 2007 and L. Ahalia, Maam Cross (L971402), 18 June 2009, all EPA (all DAM)**: HA 32 -** L. Tully, Tully Cross (L695618), 3 April, 19 July and 10 September 2007, EPA (DAM). L. Pollacappul, Kylemore (L754582), 9 July and 10 September 2007, EPA (DAM). R. Polladirk, Letterfrack (L741565), 19 September 1986 (Heneghan, 1987). **KERRY: HA 21 -** L. Brin, Derreeny (V780775), 18 June and 13 July 2008, EPA (DAM)**: HA 22 -** L. Acoose, Slievanore, Killorglan (V755854), 24 April and 9 July 2008, EPA (DAM). L. Caragh, Killorglin (V719904), 20 June 2008, EPA (DAM). L. Leane, Killarney: O'Sullivans Cascade (V916886), 17 April 1973 (Douglas and Murray, 1980), Brickeen (V937850), 3 April 1974, DJD/DAM (DAM); L. Leane, mid lake (V931886), 22 April and 24 June 2008, EPA (DAM). R. Laune outflow from L. Leane (V900910), 19 July 1978, PS (PJA/NMI). Muckross Lake, Killarney (V950853), 24 April 2008, EPA (DAM). R. Flesk, d/s New Bridge (V963885), 17 August 1981 (PJA). **KILDARE: HA 9 -** R. Rye, Leixlip (N993370), 3 January 1968 (Murray, 1972). **LEITRIM: HA 26 -** L. Rinn, Mohill (N095943), 25 June 2008, EPA (DAM). L. Sallagh, Drumlish (N165912), July 1964 (Murray, 1972)**: HA 35 -** L. Belhavel, Killarga, Dromahair (G878288), 10 June 2008, EPA (DAM). **LONGFORD: HA 26 -** L. Forbes, Cloonard, Newtownforbes (N084821), 25 June and 10 September 2008, EPA (DAM). **MAYO: HA 26 -** L. Nanoge, Urlaur (M506903), 24 April and 18 June 2008, EPA (DAM)**: HA 30 -** L. Mask, west shore, Toormakeady (M097647), 14 April and 24 June 2008, EPA (DAM)**: HA 32 -** L. Doo, Delphi, west shore (L835681), 3 April 2008, EPA (DAM). L. Glencullin, Delphi, north west shore (L815699), 26 June 2008, EPA (DAM). L. Nahaltora, Cregganbaun (L794745), 30 September 2004, DAM/WM (DAM). L. Moher, Liscarney, Westport (L977766), 21 April, 24 June and 18 September 2008, EPA (DAM)**: HA 33 -** L. Keel, Achill Island: south east shore (F650051), 17 June 2008; mid lake (F651059), 16 July 2008 and south west shore (F641055), 17 September 2008, EPA (DAM). L. Carrowmore, Bangor Erris, Derreens (F833299), 9 April 2008, EPA (DAM)**: HA 34 -** L. Alone, Ox Mountains (G367157), 22 April and 5 August 2005, JRB/MC (DAM). L. Conn, south basin, Illannaglashy (G207070), 20 August 2008, EPA (DAM). L. Cullin, Drummon Wood (G235046), 18 June and 20 August 2008, EPA (DAM). **ROSCOMMON: HA 26 -** L. Ree, Yew Point, Barley Harbour (N018485), 13 June 2007, EPA (DAM). L. O'Flynn, Ballinlough (M585786), 9 April and 12 June 2008, EPA (DAM). L. Urlar, north east shore (at Abbey) (M508900), 10 March 2005, DAM/WM (DAM). **SLIGO: HA 34 -** L. Talt, Gleneask

(G402151), 10 April 2008, EPA (DAM)**: HA 35 -** L. Arrow, Ballinafad (G789123), 11 June 2008, EPA (DAM). L. Easky, Ox Mountain (G446230), 25 September 2008, EPA (DAM). L. Gill, Sligo (G782350), 11 June 2008, EPA (DAM). L. Talt, east shore (G402151), 10 March 2005, DAM/WM (DAM). **WATERFORD: HA 17 -** L. Carrigavantry, Tramore (S548022), 21 April, 3 July, 19 August and 1 September 2009, EPA (DAM). **WESTMEATH: HA 25 -** L. Ennell, Mullingar (N378444), 15 October 1974 (DAM)**: HA 26 -** L. Owel, Mullingar (N421566), June 1973, NH (Hayes, 1980). L. Derravaragh, Crookedwood (N468634), 25 June and 17 September 2007, EPA (DAM).

***Orthocladius* (*Symposiocladius*) *holsatus* Goetghebuer, 1937**

CAVAN: HA 36 - L. Annagh, Butler's Bridge (H394125) and L. Ardan, Milltown, Belturbet (H354124), 18 September 2007, EPA (DAM). **CLARE: HA 25 -** L. Derg, d/s Killaloe (M705715), 18 September 2009, EPA (DAM). L. Dromore, Ruan, Corrofin (R345858), 21 July 2009, EPA (DAM). L. Inchicronan, Crusheen, west basin (R391860), 9 July 2009, EPA (DAM). L. Inchiquin, Corrofin (R270895), 6 June 2006, EPA (DAM). L. Rosroe, Newmarket on Fergus, north east shore (R449697), 16 September 2009, EPA (DAM). **DONEGAL: HA 38 -** L. Dunglow, Dunglow, The Rosses, west shore (B782119), 17 June and 5 August 2009, EPA (DAM). **GALWAY: HA 30 -** L. Lettercraffroe, Oughterard (M056376), 14 June 2007, EPA (DAM)**: HA 31 -** L. Aunwillan, Carraroe (L936255), 13 September 2007, EPA (DAM). L. Ballynahinch, Ballynahinch (L777478), 6 June 2007, EPA (DAM)**: HA 32 -** L. Ballynakill, Cleggan (L639581), 5 June and 11 July 2007, EPA (DAM). L. Pollacappul, Kylemore (L754582), 10 September 2007, EPA (DAM). **KERRY: HA 21 -** L. Brin, Derreeny (V780775), 18 June and 10 September 2008, EPA (DAM)**: HA 22 -** L. Cummernamuck, Killorglin (V745897), 18 July and 9 September 2008, EPA (DAM). Upper Lake, Killarney (V909821), 9 September 2008, EPA (DAM). **MAYO: HA 34 -** L. Mallard, Castlebar (M121902), 30 September 2004 (Murray and Murray, 2006). **ROSCOMMON: HA 26 -** L. Meelagh, Keadew (G901117), 11 June 2008, EPA (DAM). Grange L., Greywood, Strokestown (M938857), 25 June 2008, EPA (DAM). **WATERFORD: HA 16** Ballyscanlan Reservoir, Tramore (S540030), 19 August 2009, EPA (DAM). L. Knockaderry, Knockaderry (S496062), 1 July 2009, EPA (DAM)**: HA 17 -** Belle Lake, Dunmore East(S665049), 2 July 2009, EPA (DAM). L. Carrigavantry, Tramore (S548022), 1 September 2009, EPA (DAM). **WESTMEATH: HA 26 -** L. Killinure, Wineport (N067458), 26 June 2007, EPA (DAM).

***Orthocladius* (*Symposiocladius*) *lignicola* Kieffer, 1914**

DUBLIN: HA 9 - R. Dodder, in trout stomach contents, Fort Bridge, Bohernabreena (O009242), March 1983, MKQ (Henghan and Murray, 1987). **LEITRIM: HA 35 -** R. Bonet

tributary, Manorhamilton (G861447), 22 April 2004, JRB (DAM). **TIPPERARY: HA 15 -** R. Munster, Commons (S328551), 8 April 2004, JRB (DAM)**: HA 18 -** R. Sheep, Galtymore Mountain (R905185), 7 May 1999, CB (PJA)**: HA 25 -** R. Mulkear tributary, Silvermines (R821682), 14 April 2004, JRB (DAM). R. Ollatrim, Moneygall (S042773), 14 April 2004, JRB (DAM). **WICKLOW: HA 10 -** Glencullen R., Knocksink (O218180), 15 May 1991 (PJA/NMI).

***Orthocladius* (*Symposiocladius*) *ruffoi* Rossaro and Prato, 1991**

ANTRIM: HA 4 - R. Bush, Conogher Bridge (C963305), 10 September 2000 and R. Glenariff (Inver/Glenariff), Cushendall (D215205), 2 July 2000 (Langton, 2002). **CORK: HA 19 -** Carrigdroihid Reservoir, Ashton (W360703), 16 September 2008, EPA (DAM). **DERRY: HA 2 -** R. Roe, Largy Bridge, Limavaddy (C681202), 14 July 2000 (Langton, 2002). Fire dam Binevenagh Forest, Coleraine (C699304), 18 May 2000 (PHL)**: HA 3 -** Downhill Forest stream, Coleraine (C759348), 25 July 1999 (PHL). R. Bann, Coleraine (C854304), 12 April 1999, 19 February 2000, 11 April 2010 and 17 August 2012 (PHL). **DONEGAL: HA 37 -** R. Eanymore, Drumagraa Bridge (G863822), 18 August 1981 (Hayes, 1991)**: HA 39 -** R. Glashagh, Drumbologe, Letterkenny (C096153), 18 July 2000 (Langton, 2002). **KERRY: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). **LIMERICK: HA 25 -** R. Mulkear, Dromkeen Bridge (R741480), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** L. Glencullin, Delphi, south west shore (L819696), 25 August 2008, EPA (DAM). R. Erriff, Ashleigh Falls (L895645), 18 August 1981, BPH (Murray, 2005). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168) and Metal Bridge, Tobercurry (G464138), 30 August 1982 (Hayes, 1991).

***Paracladius conversus* (Walker, 1856)**

CLARE: HA 25 - L. Derg, d/s Killaloe (M705715), 21 April 2009, EPA (DAM). **DERRY: HA 3 -** R. Agivey, ford at Ballynameen (C827148), 14 June 2008 (PHL). L. Neagh, unspecified (H9080), no data (McLarnon and Carter, 2000). **GALWAY: HA 30 -** L. Corrib Lower, Hurney (M258310), April 1980, BC (DAM). **KERRY: HA 22 -** L. Leane, Killarney, Castlelough Bay, north shore (V966866), 27 July 1973 (Douglas and Murray, 1980). **MAYO: HA 32 -** R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972)**: HA 33 -** pond, Geata Mor, Belmullet (F671303), 3 February 2002, DAM/WM (DAM). **MEATH: HA 7 -** R. Boyne, Slane Bridge (N965737) and Knowth Weir (N995720), 19 July 1989 (DAM). R. Blackwater, Sedenrath Bridge (N762759), 30 March 1976 (O'Flaherty, 1976). Yellow R., tributary to R. Blackwater, u/s tailings, Randalstown, Navan (N842718), 5 May 1995 (DAM) and adjacent tailings pond, Randalstown, Navan (N841715), 29 March 1996 (Finnegan, 1998). **OFFALY:**

HA 25 - R. Little Brosna, New Bridge (N016088), 2 September 1982 (Hayes, 1991). **TIPPERARY: HA 16 -** Black R., Two-Mile-Boris (S192578), 22 May 1992 (Murray and Lynch, 1992). R. Drish, Boolabeha Bridge (S190619), 22 May 1992 and Athlummon Bridge (S177593), 6 July 1992 (Murray and Lynch, 1992). R. Suir, Loughmore (S120670) and Rossestown Bridge (S134624), 6 July 1992 (Murray and Lynch, 1992)**: HA 25 -** R. Kilmastulla, Kilmastulla Bridge (R728698), 3 September 1981 (Hayes, 1991). **WESTMEATH: HA 25 -** canal below fish farm, Cullion (N431554), May 1990 (Murray, 1990). **WICKLOW: HA 10 -** L. Dan, Oldbridge (O157024), 30 September 1982, L. Frey (DAM). R. Glenealo, u/s tailings, Glendalough (T092961), 16 July 1996 (Finnegan, 1998).

***Parakiefferiella bathophila* (Kieffer, 1912)**

ANTRIM: HA 3 - Killylane Reservoir, Magherabane, Larne (J292985), 4 and 8 May 1999 (PHL)**: HA 4 -** Dungonnell Dam, Newtown Crommelin (D193170), 20 June 2000 (Langton, 2002)**: Rathlin Island -** pool east of lighthouse (D164520), 24 July 2000 (Langton, 2002). **CAVAN: HA 7 -** L. Nadreegeal, Ballyjamesduff (N537933), 18 July 2007, EPA (DAM)**: HA 36 -** L. Garty, Arvagh (N278978), 12 April and 18 July 2007, EPA (DAM). R. Erne, Kilsarin (N362910), 27 May 1982 (Hayes, 1991). **CLARE: HA 25 -** L. Graney, Doorus, west shore (R556930), 10 April and 11 August 2009, Drumandora, west shore (R553938), 15 June 2009 and Flagmount, east shore (R563932), 16 September 2009, EPA (DAM)**: HA 27 -** L. Bunny, Aughrim, south east shore (R377965), 6 April 2006, EPA (EPA); L. Bunny, Aughrim, south east shore, (R377965), 2 May, 7 June, 1 August and 5 September 2006 also 14 September 2009, EPA (DAM). L. Cullaun, Corrofin, mid east shore (R317905), 7 June and 14 September 2009, EPA (DAM). Gortglass L., Killadysert, south shore (R223596), 2 April 2009; north shore (R223599), 11 June and 15 September 2009, EPA (DAM). L. Muckanagh, Tubber, Corrofin (R368926), 3 April and 2 August 2006, EPA (EPA) and 22 July 2009, EPA (DAM). L. Rosroe, Newmarket on Fergus, north east shore, (R449697), 16 September 2009, EPA (DAM)**: HA 28 -** L. Doo, Milltown Malbay, north west shore (R113722), 11 June and 15 September 2009, EPA (DAM). L. Keagh, Milltown Malbay, south west shore (R100811), 8 July 2009, north shore (R100813), 11 June 2009, EPA (DAM), 15 September 2009, EPA (DAM) and 19 September 2012, DAM/WM (DAM). L. Lickeen, Kilfenora, west shore (R168909), 6 June 2006 also 6 April and 11 June 2009, EPA (DAM). L. Naminna, Boolteagh (R179708), 11 June and 15 September 2009, EPA (DAM). **CORK: HA 19 -** L. Allua, Ballingeary (W180652), 20 August 2008, EPA (DAM). L. Gouganebarra, Inchegeelagh (W009060), 5 May 1966 (Murray, 1972)**: HA 20 -** L. Coolkllure, Dunmanway (W177539), 17 June 2008, EPA (DAM). L. Curraghalicky, Drinagh, Dunmanway (W234046), 12 August 2008, EPA (DAM). L. Tooreen, Crookhaven (V790259), 10 April 2008, EPA (DAM). R. Ovane, Pierson's Bridge (W023454), 24 August

1983 (Hayes, 1991)**: HA 21 -** L. Bofinna, Bantry (W041488), 8 April 2008, EPA (DAM). L. Glenbeg, Ardgroom (V706530), 15 April 2008, EPA (DAM). **DERRY: HA 1 -** Upper Creggan Reservoir, Creggan, Derry (C417173), 26 April and 10 May 2001 (PHL); Lower Creggan Reservoir, Creggan, Derry (C422174), 26 April 2001 (PHL); inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 26 April and 10 May 2001 (PHL)**: HA 3 -** R. Bann, Coleraine (C854304), 26 April 2001 and 25 April 2010 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 7 May 2001 (PHL). L. Fea, Draperstown (H760868), 15 May 2002 (PHL). **DONEGAL: HA 1 -** L. Mourne, Ballybofey (H069900), 20 April 2009, EPA (DAM)**: HA 36 -** L. Golagh, Ballyshannon (G965655), 21 April, 8 June and 7 July 2009, EPA (DAM). L. Tullynasiddagh, Ballyshannon (G983656), 7 July 2009, EPA (DAM). L. Unshin, Ballyshannon (G951637), 8 June, 6 July and 8 September 2009, EPA (DAM). L. Avehy, Belalt (H043664), 27 April 2002 (PHL)**: HA 37 -** Carn L., Blue Stack Mountains (G871886), 10 May 2005, JRB/MC (DAM). R. Oily, Claggen (G751803), 8 August 1982 and R. Stragar, Duninkeely (G727792), 10 August 1982 (Hayes, 1991)**: HA 38 -** L. Altercan, The Rosses (B755158), 19 July 2000 (Langton, 2002). L. Mulladerg, The Rosses (B775199), 19 July 2000 (Langton, 2002). L. Dunglow, west shore, Dunglow (The Rosses) (B782119), 31 March, 17 June and 5 August 2009, EPA (DAM) also south east shore (B783112), 12 August 1982 (Hayes, 1991) and east shore (B787117), 19 July 2000 (Langton, 2002). L. Anure, Loughanure, east shore (B818162), 17 June 2009, EPA (DAM). L. Keel, Crolly (B848162), 7 September 2009, EPA (DAM). L. Nasnahida, Doocharry, Dunglow (B852076), 6 August and 10 September 2009, EPA (DAM). L. Dunlewey, Dunlewy (B926193), 19 July 2000 (Langton, 2002). L. Barra, Commeen (B935119), 22 April, 20 July and 9 September 2009, EPA (DAM). L. Naweelogue, Glenveagh, GNP (B974185), 5 June 1986 (Heneghan, 1986). Misty L., Glenveagh, GNP (C014228), 3 June 1986 (Heneghan, 1986). Bog pond, Inshagh, Glenveagh (C060210), 22 July 1985 (Heneghan, 1986). R. Ray, Carrowcanon (B995325), 12 August 1982 (Hayes, 1991). Muckish Gap (B999270), 1 May 1986, COK (Murray, 2005). L. An tSeisigh, Portnablagh, Sheephaven (C043361), 16 June, 28 July and 7 September 2009, EPA (DAM). L. Glen, Glen (C105292), 29 July and 8 September 2009, EPA (DAM). L. Salt, Milford (C121256), 16 June 2009, EPA (DAM). L. Fallaneas, Kindrum (C173424), 9 September 2009, EPA (DAM). L. Kindrum, Kindrum, Fanad (C186430), 22 July and 9 September 2009, EPA (DAM). L. Kiltoris, Dawros, Ardara (G675976), 17 June and 30 July 2009, EPA (DAM). L. Voriskey, The Rosses (B762176), 19 July 2000 (Langton, 2002)**: HA 39 -** L. Gartan, Church Hill (C055159), 9 September 2009, EPA (DAM). L. Akibbon, Church Hill (C068184), 23 April 2009, EPA (DAM). R. Leannan, N. Drumaboden (C165218), 12 August 1982 (Hayes, 1991). L. Fern, Millford (C180233), 23 July 2009, EPA (DAM). R. Crana, Buncrana (C347328), 15 August 1982 (Hayes, 1991)**: HA 40 -** L. Fad, Rowantree Hill, Moville (C539397), 18 August 2011

(PHL). R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991). **FERMANAGH: HA 36 -** L. Lattone, Kiltyclogher (H003456), 29 June 2000 (Langton, 2002). L. Macnean, upper, Belcoo (H042403), 29 June 2000 (Langton, 2002). **GALWAY: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 (Hayes, 1991)**: HA 30 -** L. Anillaun, Maam Cross (L980470), 8 June and 5 September 2007, EPA (DAM). L. Corrib, no data (M1545), 1980, BC (DAM). L. Corrib Lower, Moycullen (M271360), 18 September 2007, EPA (DAM). L. Lettercraffroe, Oughterard (M056376), 5 September 2007, EPA (DAM). L. Ross, Moycullen (M188365), 8 August 2007, EPA (DAM)**: HA 31 -** L. Ahalia, north east shore, Maam Cross (L971402), 23 September 2009, EPA (DAM). L. Anaserd, Ballyconneely (L605443), 20 April, 16 May and 20 June 2006 also 4 April, 6 June and 17 July 2007, EPA (DAM). L. Ardderry, Maam Cross (L982458), 28 April 2007, EPA (DAM). L. Aunwillan, Carraroe (L936255), 7 June and 25 July 2007, EPA (DAM). L. Ballynahinch, Ballynahinch (L777478), 17 April and 6 June 2007, EPA (DAM). L. Ballynakill, Gorumna (L867236), 19 April, 15 May and 19 September 2006, EPA (DAM). L. Derryclare, Recess (L825485), 17 April 2007, EPA (DAM). L. Illauntrasna, Glentrasna, Garomna (L888254), 12 September 2007, EPA (DAM). L. Loughanaure, Kilkieran (L828320), 16 April 2007, EPA (DAM). L. Nahasleam, Maam Cross (L972440), 6 April, 20 June, 8 August and 12 September 2006 also 1 August 2007, EPA (DAM). L. Shindilla, Derreennacreeva (L958460), 12 September 2006, EPA (DAM). R. Owentouey, Tullywee Bridge, Recess (L873474), 18 August 1981 (Hayes, 1991)**: HA 32 -** L. Ballynakill, Cleggan (L639581), 3 April, 5 June and 11 September 2007, EPA (DAM). L. Nambrackmore, Ballinaboy, Toombeola (L716454), 5 April and 6 June 2007, EPA (DAM). L. Kylemore, Letterfrack (L771582), 30 July 2007, EPA (DAM). **KERRY: HA 18 -** R. Blackwater, Lacknastooka (R153008), 2 September 1981, BPH (Hayes, 1991)**: HA 21 -** L. Cloonaghlin, Waterville (V611708), 24 July 2008, EPA (DAM). L. Currane, Waterville (V535664), 18 June and 22 July 2008, EPA (DAM). Eagles L., Knocknagantee (V674728), 25 April and 9 August 2005, JRB (DAM). Erik L., Derrygarriff (V881777), 25 April 2005, JRB (DAM). L. Inchiquin, Kenmare (V837629), 15 April 2008, EPA (DAM)**: HA 22 -** L. Acoose, Slievanore, Killorglin (V755854), 24 April and 9 July 2008, EPA (DAM). L. Caragh, Killorglin (V719904), 15 July 2008, EPA (DAM). L. Cummernamuck, Killorglin (V745897), 9 September 2008, EPA (DAM). L. Guitane, Crohane, Killarney (W025846), 21 April and 8 July 2008, EPA (DAM). L. Leane, Killarney (V931886), 10 July 2008, EPA (DAM). Muckross Lake, Dundag Bay (V964858), 12 July 1972 (Douglas and Murray, 1980) and Muckross Lake (V950853), 24 April and 18 September 2008, EPA (DAM). R. Flesk, d/s Clydagh/Loo confluence (W084814), April 1979 (Ashe, 1982). Upper Lake, Killarney, Gallavalley, south west shore (V891817), 30 May 1972 (Douglas and Murray, 1980) and Upper Lake, Killarney (V909821), 24 June 2008, EPA (DAM)**: HA 23 -** L. Cam, Castlegregory (Q597079), 25 June and 29 August 2008, EPA

(DAM). **KILDARE: HA 9 -** R. Liffey, Straffan Bridge (N924293), 1929, WEF (Humphries and Frost, 1937). **KILKENNY: HA 15 -** R. Nore, Ballyragget (S445707), 28 August 1981 (Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Kilbricken (S362898), Shanahoe Bridge (S407858) and u/s Durrow (S416787), 27 August 1981 (Hayes, 1991). **LEITRIM: HA 26 -** L. Boderg, Derrycarne, north west shore (N013915), 29 July and 10 September 2008, EPA (DAM). L. Natire, north of L. Allen (G966340), 3 August 2005, JRB/MC (DAM)**: HA 35 -** L. Annary, Dromahair (G817338), 23 July 2008, EPA (DAM). L. Glenade, Manorhamilton (G831457), 22 July 2008, EPA (DAM). L. Nabrack, Crocknagapple (G860477), 4 August 2005, JRB/MC (DAM). **LIMERICK: HA 24 -** L. Gur, Holycross (R646269), 16 September 2009, EPA (DAM). **MAYO: HA 26 -** L. Nanoge, Urlaur (M506903), 24 April 2008, EPA (DAM)**: HA 30 -** L. Carra, Keel Bridge, Ballinrobe (M165680), 28 April 2008, EPA (DAM)**: HA 32 -** L. Doo, Delphi, north east shore (L834689), 6 June 2002, DAM/WM (DAM). L. Glencullin, south west shore, Delphi (L819696), 25 August 2008, EPA (DAM). R. Owengarve, Rosgalliv Bridge, Mulranny (L886962), 4 August 2004, DAM/WM (DAM). R. Owenduff, bridge on N59 south of Leanane (L810595), 9 May 2003, DAM/WM (DAM)**: HA 33 -** L. Acorrymore, Achill Island (F578057), 17 June and 16 July 2008, EPA (DAM). L. Keel, Achill Island (F651059), 16 July 2008, EPA (DAM). L. Carrowmore, Bangor Erris, Derreens (F833299), 9 April, Cloontakilla (F851253), 17 June and Knocknascollop (F830282), 17 September 2008, EPA (DAM)**: HA 34 -** L. Alone, Ox Mountains (G367157), 5 August 2005, JRB/MC (DAM). R. Moy, Cloongullaun (G348016), 30 August 1982, Bellanacurra (G403047) and Ballylahan (M227992), 29 August 1982 (Hayes, 1991). **MEATH: HA 7 -** R. Boyne, Bellinter Bridge (N894626), 21 August 1988; Ardsallagh, at St Bridget's Well (N897635), 7 July 1988; New Bridge, Navan (N873679), 18 August 1988 (all Murray, 1988); Stackallen Bridge (N918713), 12 July 1981 (Hayes, 1991) and 17 August 1988 (Murray, 1988). R. Blackwater, Bloomsbury Bridge, Oristown (N793741) and Donaghpatrick (N819723), 19 August 1988 (Murray, 1988)**: HA 8 -** R. Nanny, road bridge u/s Duleek (O035655) and road bridge at Duleek (O050683), 6 June 2006, DAM/WM (DAM). **ROSCOMMON: HA 26 -** R. Suck, Athleague (M825758), Mount Talbot (M813531) and Ballyforan (M817464), 16 July 1981 and Newtown (M844346), 15 August 1981 (Hayes, 1991). L. Annaghmore, Strokestown, Elphin (M902838), 8 April and 2 September 2008, EPA (DAM). L. Cavetown, Boyle (M832974), 9 April and 11 June 2008, EPA (DAM). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168) and Annagh (G466123), 30 August 1982 (Hayes, 1991)**: HA 35 -** L. Arrow, Ballinafad (G789123), 29 April 2008, EPA (DAM). L. Templehouse, Ballymote (G615171), 30 April 2008, EPA (DAM). **TIPPERARY: HA 18 -** L. Curra, Galtymore Mountain (R867242), 26 May and 10 August 2005, JRB (DAM). **WATERFORD: HA 17 -** L. Carrigavantry, Tramore (S548022), 3 July 2009, EPA (DAM). **WESTMEATH: HA 26 -** L. Owel, Mullingar (N421566), May 1973, NH (Hayes, 1980) and 1981 (Forde, 1985)**: HA 36 -** L.

Bane, Collinstown (N550712), 26 April, 23 May, 26 June and 22 August 2006, EPA (EPA). **WICKLOW: HA 10 -** L. Tay, Luggala (O163008), 28 July and 2 September 2009, EPA (DAM). Vartry Reservoir, Roundwood, north basin (O205050), 6 April 2009, EPA (DAM). Glendalough Lake Upper, east shore, Laragh, WMNP (T110963), 10 July 1996 (DAM) and (T100960), 29 July 2009, EPA (DAM).

***Parakiefferiella coronata* (Edwards, 1929)**

CLARE: HA 25 - L. Derg, d/s Killaloe (M705715), 17 June 2009, EPA (DAM)**: HA 27 -** L. Bunny, Aughrim, south east shore (R377965), 7 June, 4 July and 1 August 2006 (EPA) also 11 June and 14 July 2009, EPA (DAM). L. Cullaun, Corrofin, mid east shore (R317905), 7 June, 4 July and 5 September 2006 also 16 June 2009, EPA (DAM). L. Dromore, Ruan, Corrofin (R345858), 8 June 2006, EPA (DAM). L. Muckanagh, Tubber, Corrofin (R368926), 3 July and 2 August 2006, EPA (EPA). **CORK: HA 21 -** L. Bofinna, Bantry (W041488), 8 April and 18 June 2008, EPA (DAM). **DONEGAL: HA 36 -** L. Unshin, Ballyshannon (G951637), 8 June and 6 July 2009, EPA (DAM). L. Vearty, Ballyshannon (G995658), 8 July 2009, EPA (DAM)**: HA 37 -** L. Eske, Donegal (G973844), 8 June and 14 July 2009, EPA (DAM)**: HA 38 -** L. Dunglow, Dunglow, The Rosses, west shore (B782119), 17 June and 5 August 2009, EPA (DAM). L. Keel, Crolly (B848162), 17 June 2009, EPA (DAM). L. Nasnahida, Doocharry, Dunglow (B852076), 17 June and 6 August 2009, EPA (DAM). L. Barra, Commeen (B935119), 10 June 2009, EPA (DAM). L. Veagh, north east shore, Glenveagh (C038233), 24 July 1985 (Heneghan, 1986). L. Glen, Glen (C105292), 29 July 2009, EPA (DAM). L. Greenan, Loughsalt, Kilmacrennan (C117262), 8 September 2009, EPA (DAM). L. Kiltoris, Dawros, Ardara (G675976), 30 July 2009, EPA (DAM). **GALWAY: HA 30 -** L. Anillaun, Maam Cross (L980470), 8 June and 1 August 2007, EPA (DAM). L. Corrib Upper, Oughterard (M138486), 11 June 2007, EPA (DAM)**: HA 31 -** L. Anaserd, Ballyconneely (L605443), 10 and 17 July 2007, EPA (DAM). L. Aunwillan, Carraroe (L936255), 7 June and 25 July 2007, EPA (DAM). L. Ballynahinch, Ballynahinch (L777478), 6 June, and 23 July 2007, EPA (DAM). L. Derryclare, Recess (L825485), 6 June 2007, EPA (DAM). L. Nahasleam, Maam Cross (L972440), 20 June, 11 July and 8 August 2006, also 1 August 2007, EPA (DAM)**: HA 32 -** L. Enask, Beaghcauneen (L662468), 6 June 2007, EPA (DAM). L. Nambrackmore, Ballinaboy-Toombeola (L716454), 6 June 2007, EPA (DAM). L. Pollacappul, Kylemore (L754582), 5 June and 9 July 2007, EPA (DAM). **KERRY: HA 21 -** L. Cloonaghlin, Waterville (V611708), 19 June and 24 July 2008, EPA (DAM). L. Currane, Waterville (V535664), 18 June 2008, EPA (DAM). L. Namona, Waterville (V596711), 19 June and 23 July 2008, EPA (DAM)**: HA 22 -** L. Caragh, Killorglin (V719904), 15 July 2008, EPA (DAM). L. Guitane, Crohane, Killarney (W025846), 8 July 2008, EPA (DAM). L. Leane, Killarney (V931886), 24 June 2008, EPA

(DAM). Muckross Lake, Dundag Bay (V964858), 12 July 1972 (Murray, 2005) and Muckross (V950853), 24 June and 16 July 2008, EPA (DAM). Upper Lake, Killarney (V909821), 24 June 2008, EPA (DAM). **LEITRIM: HA 35 -** L. Annary, Dromahair (G817338), 10 June 2008, EPA (DAM). **MAYO: HA 30 -** L. Aille, Aille, Westport (M071807), 24 June 2008, EPA (DAM). L. Carra, Keel Bridge, Ballinrobe (M165680), 19 June 2008, EPA (DAM)**: HA 32 -** L. Doo, Delphi, west shore (L835681), 28 June 2006, EPA (DAM). L. Glencullin, Delphi, north west shore (L815699), 26 June 2008, EPA (DAM). L. Fin, Delphi (L841657), 28 June and 12 July 2006, EPA (DAM)**: HA 33 -** L. Acorrymore, Achill Island (F578057), 16 July 2008, EPA (DAM). **SLIGO: HA 34 -** L. Talt, Gleneask (G402151), 15 July 2008, EPA (DAM). **WESTMEATH: HA 26 -** L. Coosan, Athlone (N055449), 26 June 2007, EPA (DAM)**: HA 36 -** L. Bane, Collinstown (N550712), 26 June and 24 July 2006 (EPA). **DONEGAL: HA 38 -** L. Anure, Loughanure, east shore (B818162), 17 June 2009, EPA (DAM).

***Parakiefferiella fennica* Tuiskunen, 1986**

DONEGAL: HA 37 - L. Eske, Donegal (G973844), 17 April and 14 July 2009, EPA (Murray, 2012a).

***Parakiefferiella scandica* (Brundin, 1947)**

CORK: HA 20 - L. Curraghalicky, Drinagh, Dunmanway (W234046), 9 April 2008, EPA (DAM). **DERRY: HA 3 -** R. Bann, Coleraine (C854304), 5 May and 18 June 1999 (PHL). **GALWAY: HA 30 -** L. Ballyquirke, Moycullen (M232317), 14 June and 14 September 2007, EPA (DAM). L. Lettercraffroe, Oughterard (M056376), 18 April 2007, EPA (DAM)**: HA 32 -** L. Enask, Beaghcauneen (L662468), 6 June 2007, EPA (DAM). L. Nambrackmore, Ballinaboy-Toombeola (L716454), 5 April 2007, EPA (DAM). **KERRY: HA 21 -** L. Namona, Waterville (V596711), 8 May 2008, EPA (DAM). **MAYO: HA 32 -** L. Doo, Delphi, west shore (L835681), 9 May 2006, EPA (DAM). **ROSCOMMON: HA 26 -** L. O'Flynn, Ballinlough (M585786), 12 June 2008, EPA (DAM). **TYRONE: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WESTMEATH: HA 7 -** L. Lene (N510685), 26 April 2006, EPA (DAM).

***Parakiefferiella smolandica* (Brundin, 1947)**

CLARE: HA 25 - L. Graney, Doorus, west shore (R556930), 6 September 2006, Drumandora, west shore (R553938), 15 June 2009 and Flagmount, east shore (R563932), 16 September 2009, EPA (DAM)**: HA 27 -** L. Cullaun, Corrofin, mid east shore (R317905), 7 June and 4 July 2006, EPA (EPA)**: HA 28 -** L. Lickeen, Kilfenora, west shore (R163909), 11 June 2009, EPA (DAM). **DERRY: HA 1 -** Upper Creggan Reservoir, Creggan, Derry (C417173), 17 May 2002 (PHL).

DONEGAL: HA 36 - L. Golagh, Ballyshannon (G965655), 8 June 2009, EPA (DAM)**: HA 38 -** L. Dunglow, Dunglow, west shore, The Rosses (B782119), 17 June and 5 August 2009, EPA (DAM). L. Nasnahida, Doocharry, Dunglow (B852076), 17 June and 6 August 2009, EPA (DAM). L. Veagh, north east shore near GNP visitor centre, Glenveagh (C033223), 19 July 2000 (Langton, 2002). L. Greenan, Loughsalt, Kilmacrennan (C117262), 16 June 2009, EPA (DAM). L. Salt, Milford (C121256), 16 June 2009, EPA (DAM). L. Keel, Kilmacrennan (C158243), 16 June and 16 July 2009, EPA (DAM)**: HA 39 -** L. Gartan, Church Hill (C055159), 22 July 2009, EPA (DAM). **GALWAY: HA 30 -** L. Beaghcauneen, Ballinaboy (L679470), 6 June 2007, EPA (DAM). L. Bofin, Maam Cross (M034441), 31 July 2007, EPA (DAM)**: HA 31 -** L. Ahalia, Maam Cross (L971402), 22 April 2009, EPA (DAM). L. Anaserd, Ballyconneely (L605443), 6 June 2007, EPA (DAM). L. Ballynahinch, Ballynahinch (L777478), 6 June 2007, EPA (DAM). L. Illauntrasna, Glentrasna, Garomna (L888254), 12 September 2007, EPA (DAM)**: HA 32 -** L. Pollacappul, Kylemore (L754582), 5 June 2007, EPA (DAM). **KERRY: HA 21 -** L. Cloonaghlin, Waterville (V611708), 19 June 2008, EPA (DAM)**: HA 22 -** Muckross Lake, Muckross, Killarney (V950853), 16 July 2008, EPA (DAM). **KILDARE: HA 9 -** pond, Lyons Estate, Celbridge (N972285), 29 March 1982, PJA (DAM). **LEITRIM: HA 26 -** L. Bofin, Rinnafarna, Dromod (N036891), 29 July 2008, EPA (DAM). **MAYO: -** L. Nanoge, Urlaur (M506903), 27 August 2008, EPA (DAM)**: HA 32 -** L. Fin, Delphi (L841657), 9 May 2006, EPA (DAM). L. Carrokeel, Murrisk (L924830), 5 August 2004, DAM/WM (DAM). L. Moher, Liscarney, Westport (L977766), 21 April 2008, EPA (DAM). **ROSCOMMON: HA 26 -** L. Meelagh, Keadew (G901117), 15 April and 11 June 2008, EPA (DAM). **WESTMEATH: HA 7 -** L. Lene (N510685), 22 August 2006, EPA (DAM)**: HA 36 -** L. Bane, Collinstown (N550712), 22 August 2006, EPA (EPA). **WICKLOW: HA 10 -** Upper Glendalough Lake, Laragh, WMNP (T100960), 29 July 2009, EPA (DAM).

***Parakiefferiella* sp. pe1 sensu Reiss (in Langton and Visser, 2003)**

CAVAN: HA 36 - L. Macnean, lower, Blacklion (H106378), 7 June 2007, EPA (Murray, 2010). **CLARE: HA 27 -** L. Bunny, Aughrim south east shore (R377965), 10 May 2005, EPA (Murray, 2010), 7 June 2006 (EPA) also 11 June, 14 July and 14 September 2009, EPA (DAM). **DONEGAL: HA 36 -** L. Golagh, Ballyshannon (G965655), 7 July 2009, EPA (DAM)**: HA 37 -** L. Eske, Donegal (G973844), 14 July 2009, EPA (DAM). **LEITRIM: HA 26 -** L. Boderg, Derrycarne, north west shore (N013915), 14 May and 10 September 2008, EPA (Murray, 2010)**: HA 35 -** L. Glenade, Glenade, Manorhamilton (G831457), 10 June and 22 July 2008, EPA (Murray, 2010). L. Glencar, Glencar (G757435), 21 July and 2 September 2008, EPA (DAM). **LONGFORD: HA 26 -** L. Forbes, Cloonard, Newtownforbes (N084821), 14 May 2008, EPA (Murray, 2010). **MAYO: HA 30 -** L. Corrib Upper, Kitteen's Bay, west shore, north of

Oughterard (M110463), 25 June 2010, JRB (DAM)**: HA 34 -** L. Cullin, Drummon Wood (G235046), 18 June and 20 August 2008, EPA (DAM). **ROSCOMMON: HA 26 -** R. Suck, Mount Talbot (M813531), 14 August 1981 (Hayes, 1991). L. Cavetown, Boyle (M832974), 17 July 2008, EPA (DAM). L. Key, wharf at park, Boyle (G848040), 11 June 2008, EPA (Murray, 2010). L. Ree, Yew Point, Barley Harbour (N018485), 25 April 2007, EPA (Murray, 2010). **SLIGO: HA 34 -** L. Talt, Gleneask (G402151), 18 June 2008, EPA (Murray, 2010). **WESTMEATH: HA 26** - L. Ree, Coosan (N050450), 15 August 2007, EPA (DAM).

***Paralimnophyes longiseta* (Thienemann, 1919)**

DONEGAL: HA 38 - R. Owenveagh upper, GNP, Ballaghgeeha, Glenveagh (B970160), 29 July 1985 (Heneghan, 1986). L. Veagh, north east shore, Glenveagh (C038233), 24 July 1985 (Heneghan, 1986). **DUBLIN: HA 9** - Maureens Brook, R. Dodder headwater (O125187), 26 July 1949 (Reilly, 1951; Murray, 1972). **GALWAY: HA 30 -** L. Corrib (M150450), 1980, BC (DAM).

***Parametriocnemus stylatus* (Spärck, 1923)**

ANTRIM: HA 3 - R. Kells, Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002). R. Sixmilewater, Templepatrick (J227867), 4 May 1999 (PHL). Glen Burn, Lower Glen Bridge (J263994), 4 May 1999 (PHL)**: HA 4 -** R. Bush, Seneirl Bridgeidge (C943362), 16 July 2000 (Langton, 2002) and Derrykeegan (C946334), 15 May 2005 (PHL). R. Glendun (Glendun R.), Drumfresky, Cushendun (D193308), 2 July 2000 (Langton, 2002)**: HA 5 -** Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **CARLOW: HA 12 -** R. Slaney, Motabower Bridge (S832778), Kilcarry Bridge (S893624) and Kildavin (S899597), 28 July 1981 (Hayes, 1991). R. Derreen, Acann Bridge (S900781), 29 July 1981 (Hayes, 1991). **CAVAN: HA 7 -** L. Mullagh, Mullagh (N680856), 23 May 1968 (Murray, 1972)**: HA 26 -** R. Shannon tributary, Cuilcagh Mountain (H074314), 28 April 2004, JRB (DAM). **CLARE: HA 25 -** L. Graney (R568907), 24 May 2003(PHL). R. Bow, east of L. Graney (R663904), 19 April 2004, JRB (DAM)**: HA 27 -** L. Atedaun, Corrofin (R297884), 21 April 2009, EPA (DAM)**: HA 28 -** R. Caher, 2.5km from source, Holywell (M173069), 27 October 1999 and 29 April 2000, CB (Kelly-Quinn *et al.*, 2003). R. Creegh, Mountrivers Bridge, Doonbeg (Q991659), 30 July 1982 (Hayes, 1991). **CORK: HA 18 -** R. Blackwater, Shamrock Bridge, Millstreet (W221935) and Charles Bridge, Millstreet (W248943), 2 September 1981; Ballymacquirk Bridge, Banteer (W382989), Roskeen Bridge, Banteer (W444988) and Lombardstown (W463968), 1 September 1981 also Killavullen (W648998), 31 August 1981 (all Hayes, 1991)**: HA 19 -** L. Gouganebarra, Inchegeelagh (W009060), 4 April 1966 (Murray, 1972)**: HA 20 -** L. Coolkllure, Dunmanway (W177539), 7 April 2008, EPA (DAM). R. Bandon: Long Bridge, Dunmanway

(W242631), 18 April, 25 August, 25 September and 28 November 1980; Bealabouy Bridge, Dunmanway (W257514), 25 September 1980; u/s Ballineen (W331537), 20 March, 18 April, 30 June, 25 August, 25 September, 31 October and 28 November 1980; Ballineen Bridge (W434538), 18 April, 30 June, 25 August and 25 September 1980; Castle Bernard (u/s Bandon) (W472546), 18 April, 30 June, 25 August and 31 October 1980; 2.5km d/s Bandon (W516569), 18 April, 25 September, 31 October and 28 November 1980 (all Morgan, 1982). R. Ilen, Madore (W103419) and Hollybrook (W117363) also R. Ovane, Pierson's Bridge (W023454), 24 August 1983 (Hayes, 1991)**: HA 21 -** L. Glenbeg, Ardgroom (V706530), 3 September 2008, EPA (DAM). **DERRY: HA 1 -** Upper Creggan Reservoir, Creggan, Derry (C417173), 10 May 2001 (PHL). Inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 26 April, 10 May and 18 May 2001 (PHL)**: HA 2 -** R. Roe, Largy Bridge, Limavaddy (C681202), 14 July 2000; fire dam, Binevenagh Forest, Coleraine (C699304), 18 May 2000 and burn at Largantea picnic area, Formoyle, Coleraine (C738287), 9 June 2000 (Langton, 2002)**: HA 3 -** Howell's Tarn stream, Ballywildrick, Coleraine (C766325), 21 April and 7 July 2002 (PHL). Downhill Forest stream, Coleraine (C759348), 17 March and 25 July 1999, 21 August 2001 (PHL). Inflow to Balinrees Reservoir, Coleraine (C793307), 9 June 2000 (Langton, 2002). R. Bann, Coleraine (C854304), from 12 April to 1 October 1999, from 6 April to 16 July 2000, 26 April 2001 and 24 August 2012 (PHL). R. Agivey, Glascort Bridge (C907226), 16 July 2000 (Langton, 2002). R. Moyola, New Bridge, Magherafelt (H955905), 4 July 2000 (Langton, 2002) and 7 May 2001 (PHL). **DONEGAL: HA 1 -** R. Deele, Legland, Raphoe (C136028), 19 July 2000 (Langton, 2002)**: HA 36 -** R. Glengariff tributary, west of Rossinver (G859501), 28 April 2004, JRB (DAM)**: HA 37 -** L. Eske, Donegal (G973844), 14 July 2009, EPA (DAM). R. Eany, d/s Eanybeg confluence (G842815) and R. Eanymore, Drumagraa Bridge (G863822), 10 August 1982 (Hayes, 1991). R. Oily, Claggen (G751803), 8 August 1982 (Hayes, 1991)**: HA 38 -** R. Tullaghobeg, Millmount (B933304), 12 August 1982 (Hayes, 1991). Inflow stream to north east shore of L. Veagh, 50m from lake, Glenveagh (C030218), June 1989 (Hernan, 1991). R. Ray, Crocnalaragh (B989272), 12 August 1982 (Hayes, 1991)**: HA 39 -** R. Leannan, Kilnacrenan (C145200), 12 August 1982 and R. Leannan, Claragh (C197210), 13 August 1982 (Hayes, 1991). **DUBLIN: HA 9 -** R. Dodder, Fort Bridge, Bohernabreena (O009242), 2 April 1946 (Fitzgerald, 1947). **FERMANAGH: HA 36 -** L. Erne, Lower, Black Bay (H072639), 27 April 2002 (PHL). R. Colebrook, Killarbran Bridge, Killarbran (H416441), 24 September 1998 (PHL). **GALWAY: HA 25 -** R. Woodford, bridge on R351, Woodford (M732000), 24 May 2003 (PHL)**: HA 29 -** L. Cutra, Gort (R485986), 24 May 2003 (PHL)**: HA 30 -** stream at N59 picnic site, Moycullen (M204326), 24 May 2003 (PHL). R. Aille tributary, Toormakeady (M022683), 21 April 2004, JRB (DAM). R. Loughkip, Ballyquirk, Moycullen (M224313), 17 August 1981, BPH (Hayes, 1991). R. Owenriff, Oughterard (M112426), 25 May 2003 (PHL)**:**

HA 31 - L. Ahalia, Maam Cross, north east shore (L971402), 22 April and 23 September 2009, EPA (DAM). L. Ballynakill, Gorumna (L867236), 8 August 2006, EPA (DAM). L. Derryclare, Recess (L825485), 16 July 2007, EPA (DAM). R. Owentouey, Tullywee Bridge, Recess (L873474), 18 August 1981 (Hayes, 1991)**: HA 32 -** R. Owenglin, Clifden (L677506) and R. Dawros, Tullywee Bridge, Letterfrack (L730586), 18 August 1981 (Hayes, 1991). Kylemore Road, Letterfrack (L745582), 19 September 1986 (Heneghan, 1987). **KERRY: HA 21 -** L. Brin, Derreeny (V780775), 10 September 2008, EPA (DAM). R. Inny, Scarriff Bridge (V504696) and u/s Waterville (V525704), 24 August 1983 (Hayes, 1991). R. Owbaun, Dromderalough, Kilgarvan (V971783), 16 April 2004, JRB (DAM)**: HA 22 -** Curraghalia stream, north west of Moll's Gap (V845789), 17 April 2004, JRB (DAM). Muckross Lake, Camilan Bay (V943859), 1973, DJD/DAM (Douglas and Murray, 1980). R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Caragh, Blackstones Bridge, d/s R. Acoose confluence (V710864) and outflow from L. Caragh (V713924), 1975, CD (all Dowling *et al.*, 1981); R. Caragh tributary, south east of Glencar (V747802), 17 April 2004, JRB (DAM). R. Clydagh, u/s Clydagh Bridge (W114826), April to November 1978 (Ashe, 1982). R. Flesk, d/s Clydagh/Loo confluence (W084814), Garries Bridge (W082835), Flesk Bridge (W034876), d/s Whitebridge (V987900) and u/s L. Leane (V964894), April to November 1978 (Ashe, 1982); R. Flesk, White Bridge (V987904), June 1973 (Douglas and Murray, 1980) and d/s Whitebridge (V987900), 27 July 1976 (Ashe, 1976). R. Loo, Aughnanus Bridge, Crohane (W045790), April to November 1978 (Ashe, 1982). **KILDARE: HA 7 -** R. Boyne, u/s Leinster Bridge (N665435), June 1989 (Murray and Lynch, 1991)**: HA 9 -** R. Liffey, Sallins (N881245), 17 July 1983 and Straffan Bridge (N924293), 15 July 1983 (Hayes, 1991). **KILKENNY: HA 15 -** R. Nore, Threecastles (S458626), 27 August 1981 and Ballyragget (S445707), Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Kilbricken (S362898) and u/s Durrow (S416787), 27 August 1981 also Athanagh (S423763), 28 August 1981 (Hayes, 1991). **LEITRIM: HA 26 -** L. Allen, Mountallen, Drumshanbo (G950145), 28 April 2008, EPA (DAM)**: HA 35 -** L. Glencar, Glencar (G757435), 2 September 2008, EPA (DAM). R. Bonet tributary, Manorhamilton (G861447), 22 April 2004, JRB (DAM). **LIMERICK: HA 24 -** Bleach L., Pallaskenry (R441569), 28 July 2009, EPA (DAM)**: HA 25 -** R. Mulkear, Cappamore (R775514) and Dromkeen Bridge (R741480), 8 September 1981 (Hayes, 1991). **MAYO: HA 30 -** L. Mask, Toormakeady (M097647), 14 April and 22 September 2008, EPA (DAM)**: HA 31 -** R. Tooreenacoona inflow to L. Inagh, Gleninagh (L809569), 21 April 2004, JRB (DAM)**: HA 32 -** L. Doo, Delphi, west shore (L833680), 25 August 2008, EPA (DAM). Nahaltora stream, d/s L. Nahaltora, Derrygarve, Cregganbaun (L784744), 6 June 2004, DAM/WM (DAM). R. Burleemslough, Clapper Bridge Ford, u/s Roonagh L., Killeen (L754759), 5 August 2004,

DAM/WM (DAM). R. Bunowen, Louisburg, u/s bridge (L807807), 7 May and 5 August 2004 and d/s Laghta Bridge, Laghta Eighter (L852751), 30 September 2004, DAM/WM (DAM). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). R. Owenwee, Westport, u/s Aghamore Bridge (L972817), 5 August 2004 and Belclare Bridge, Westport (L959822), 30 September 2004, DAM/WM (DAM). R. Erriff, Ashleigh Falls (L895645), 18 August 1981 (Hayes, 1991). Westport L., Westport Woods Hotel, Westport (L985843), 7 May 2004, DAM/WM (DAM)**: HA 33 -** R. Owenmore, Bangor Erris (F863228), 18 August 1983 (Hayes, 1991)**: HA 34 -** L. Conn: Poulwansha (G160096), 8 April 1965, AJOS; Cloghans (G205133), 1 October 1965, AJOS; Woodford Shallows, (G168140), 31 August 1964, AJOS; Errew (G167118), 31 March 1965, AJOS; Gillaroo Bay, Massbrook (G175051), 16 August 1965, AJOS (DAM; Murray, 1972). L. Mallard, Castlebar (M121902), 30 September 2004, DAM/WM (DAM). R. Moy, Cloongullaun (G348016), 30 August 1982 and Ballylahan (M227992), 29 August 1982 (Hayes, 1991)**: Clare Island -** seepage, Knockaveen hillside (L698855), 4 June 2002 and Loughnapucar stream (L658848), 21 August 2002 (Murray and Murray, 2003). **MEATH: HA 6 -** R. Dee, Drumconrath (N910894), 27 July 1983 (Hayes, 1991)**: HA 7 -** R. Kinnegad, Kinnegad (N601448), June 1989 (Murray and Lynch, 1991). R. Boyne: Scarrif Bridge (N733527) and Newtown, Trim (N815571), 9 July 1981 (Hayes, 1991); Trim New Bridge (N800570) and Bective Bridge (N860598), 5 September 1988 (Murray, 1988); Bellinter Bridge (N894625), 21 May 1968 (Murray, 1972), 21 August 1988 and 11 August 1999, DAM/WM (DAM); d/s Bellinter Bridge (N895628), 3 May 1982 (DAM); Ardsallagh, riverside near St Bridget's Well (N897635), 7 July 1988 (Murray, 1988); Kilcarn Bridge, Navan (N884657), 21 August 1988 and New Bridge, Navan (N873679), 18 August 1988 (Murray, 1988); Blackcastle Weir, Navan (N884689), 9 September 1988 (Murray, 1988); Stackallen Bridge (N917713), 17 August 1988 (DAM) and 19 July 1989 (Hayes, 1991); Slane Bridge (N965737) and Oldbridge (O045761), 19 July 1989 (DAM). Pond near R. Boyne, Ardsallagh (N896632), 26 April 1982 (DAM). Artificial tank, Ardsallagh, Navan (N896635), 10 April 2005 (Murray, 2005). R. Blackwater, Bloomsbury Bridge, Oristown (N793741) and Donaghpatrick (N819723), 19 August 1988, also Poolboy Bridge, Navan (N871681), 18 August 1988 (Murray, 1988)**: HA 8 -** stream-pond, Meadesbrook, Kilmoon (O038594), 15 November 2005, 9 June 2006 and 10 November 2012 (DAM)**: HA 25 -** R. Little Brosna, Milltown Park (S068907) and New Bridge (N016088) also R. Brosna, Cloghan (M046209), 2 September 1982 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Frances, Castlerea (M694860), 28 April 2004, JRB (DAM). R. Suck, Castlecoote (M809627), 16 July 1981; Athleague (M825758) and Mount Talbot (M813531), 14 August 1981 and Ballyforan (M817464), 16 July 1981 (Hayes, 1991)**: HA 34 -** R. Owenlobnaglaur tributary, Ballaghaderreen (G616002), 22 April 2004, JRB (DAM). **SLIGO: HA 26 -** L. Gara, Monastredan (M708996), 28 April 2008, EPA (DAM)**: HA 34 -** R.

Moy, Cloonacool (G493168), 30 August 1982 (Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430) and R. Easky, Easky (G377378), 19 August 1983 (Hayes, 1991). **TIPPERARY: HA 15 -** R. Nore, Clonakenny (S116805), 27 August 1981 (Hayes, 1991)**: HA 16 -** R. Suir, Rossestown Bridge (S134624), 6 July 1992 (Murray and Lynch, 1992). **TYRONE: HA 1 -** stream, Gortin Glen, Gortin (H487820), 16 August 2011 (PHL)**: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WATERFORD: HA 18 -** R. Blackwater, Ballyduff (W964992) and Lismore (X047988), 31 August 1981 (Hayes, 1991). **WEXFORD: HA 12 -** Crossabeg steam, Crossabeg, Castletown (T023270), 6 May 2006, DAM/WM (DAM). R. Boro, Dunamore Bridge, Enniscorthy (S963366), R. Slaney, Clomahon (S933534), Ballycarney (S967488) and Edernline Bridge (S977345), 29 July 1981 (all Hayes, 1991). **WICKLOW: HA 10 -** Glencullen R., Knocksink (O218180), 29 June 1987, DEM/DAM (Morgan, 1989). Vartry Reservoir, Roundwood, south east shore (O214002), 24 May 1983, HD (DAM)**: HA 12 -** Askinvillar stream, Kiltealy (S826456), 7 April 2004, JRB (DAM). R. Slaney, Stratford Bridge (S895930), 28 July 1981 (Hayes, 1991).

***Paraphaenocladius exagitans* s.sp. *monticola* Strenzke, 1950**

DONEGAL: HA 38 - L. Veagh, boathouse near Castle, GNP, Glenveagh (C022211), 23 May 1986 (Heneghan, 1986 - sub "*Paraphaenocladius* sp. a" sensu Pinder 1978; Murray, 1996, 2005). **KERRY: HA 22 -** L. Cummernamuck, Killorglin (V745897), 18 July 2008, EPA (DAM). **MEATH: HA 7 -** pond near R. Boyne, Ardsallagh (N896632), 18 May 1986 (DAM).

***Paraphaenocladius impensus* subsp. *impensus* (Walker, 1856)**

CAVAN: HA 7 - L. Mullagh, Mullagh (N680856), 23 May 1968 (Murray, 1972). **CLARE: HA 27 -** L. Dromore, Ruan, Corrofin (R345858), 11 April 2006, EPA (DAM). L. Rosroe, Newmarket on Fergus, north east shore (R449697), 16 September 2009, EPA (DAM). **DERRY: HA 3 -** McFadyen's Garden, Coleraine (C848316), 14 April 2002 (PHL). Pond, near R. Macquosin, Ballytinagh Road, Coleraine (C854255), 18 April 2004 (PHL). Coleraine (C858304), 4 May 2008 (PHL). **DONEGAL: HA 38 -** L. Inshagh Road, GNP, Glenveagh (C037208), 13 May 1986 and L. Veagh, Derrylahane, GNP, Glenveagh (C037233), 24 June 1985 (Heneghan, 1986). **DUBLIN: HA 9 -** bog pool, Featherbed (O120190), 1974, CD (Dowling and Murray, 1981). **KERRY: HA 22 -** L. Leane, Killarney, Brickeen (V937850), 3 July 1973, DJD/DAM (Douglas and Murray, 1980). R. Flesk, Flesk Bridge (W034876), April 1978 (Ashe, 1982). **LOUTH: HA 6 -** Tinure Marsh, Collon (O020835), 1 June 1985, BH (DAM). **MAYO: HA 32 -** Roonagh L., Roonagh (L749759), 30 September 2004, DAM/WM (DAM): **HA 33 -** bog pools, Glenamoy (F896345), April and May, 1973, CD (Dowling, 1975; Dowling and Murray, 1981)**: HA 34 -** L. Lannagh, Castlebar L., Castlebar (M137899), 26

September 2008, EPA (DAM)**: Clare Island -** roadside between Maum and Capnagower (L712857), 27 April 2000 and roadside at Bayview Hotel (L716856), 28 April 2000 (Murray and Murray, 2003). **MEATH: HA 7 -** R. Boyne, Bellinter Bridge (N894625), 18 June 1968 (Murray, 1972). Pond near R. Boyne, Ardsallagh (N896632), 25 September 1983 (DAM). Marsh, Ardsallagh, rere garden (N893639), 10 April 2005 (Murray, 2005). **ROSCOMMON: HA 26 -** L. O'Flynn, south east shore, Ballinlough (M585786), 9 April 2008, EPA (DAM).

***Paraphaenocladius irritus* subsp. *irritus* (Walker, 1856)**

DONEGAL: HA 36 - L. Vearty, Ballyshannon (G995658), 7 September 2009, EPA (DAM)**: HA 38 -** L. Salt, Milford (C121256), 24 May 1986, COK (Heneghan, 1986; Murray, 2005)**: HA 39 -** R. Crana, Ballymagan (C379344), 15 August 1982, BPH (Murray, 2005). **DUBLIN: HA 9 -** bog pool, Featherbed (O120190), 1974, CD (Dowling and Murray, 1981). **KERRY: HA 22 -** R. Loo, Aughnanus Bridge, Crohane (W045790), September 1979 (Ashe, 1982). **MAYO: HA 33 -** L. Carrowmore, Bangor Erris, Derreens (F833299), 9 April 2008 and Knocknascollop (F830282), 17 September 2008, EPA (DAM). Bog pools, Glenamoy (F896345), April 1972, CD (Dowling, 1975; Dowling and Murray, 1981)**: HA 34 -** L. Washpool, Ballycarra (M219842), 25 September 2008, EPA (DAM)**: Clare Island -** sea coast at Bayview Hotel (L717857), 29 April 2000, DAM/WM (Murray and Murray, 2003).

***Paraphaenocladius penerasus* (Edwards, 1929)**

CLARE: HA 27 - L. Cullaun, Corrofin (R317905), 5 April 2006, EPA (EPA). **DERRY: HA 1 -** inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 10 May 2001 (PHL). **DONEGAL: HA 39 -** R. Crana, Ballymagan (C379344), 15 August 1982 (Hayes, 1991 - sub *Paraphaenocladius* Pe3, sensu Langton, 1984; Murray, 1996). **MEATH: HA 7 -** pond near R. Boyne, Ardsallagh (N896632), 25 September 1993 (Murray, 1996, 2005)**: HA 8 -** stream-pond, Meadesbrook, Kilmoon (O038594), 7 May 1976 (DAM).

***Paraphaenocladius pseudirritus* subsp. *pseudirritus* Strenzke, 1950**

ANTRIM: HA 3 - Leslie Hill pool, Ballymoney (C935263), 6 October 2002 (PHL). **DERRY: HA 3 -** Coleraine (C858304), 4 May 2008 (PHL). **KERRY: HA 22 -** R. Loo, Aughnanus Bridge, Crohane (W045790), September 1979 (Ashe, 1982). **MAYO: HA 32 -** R. Owenwee R., Belclare Bridge, Westport (L959822), 30 September 2004, DAM/WM (DAM)**: HA 33 -** bog pools, Glenamoy (F896345), 1973, CD (Dowling and Murray, 1981)**: Clare Island -** wetland at Ballytouhy (L696882) and seepage, south of lighthouse (L695879), 20 August 2002 (Murray and Murray, 2003).

***Paratrichocladius rufiventris* (Meigen, 1830)**

ANTRIM: HA 3 - L. Neagh, Antrim Bay (J135866), 4 May 1999 and 28 March 2001 (PHL); Churchtown Point (J056852), 13 October 2000 (Langton, 2002). R. Kells, Shank Bridge, Kells(J126982), 20 June 2000 (Langton, 2002). Glen Burn, Lower Glen Bridge (J263994), 4 May 1999 (PHL)**: HA 5 -** Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **CLARE: HA 27 -** L. Dromore, Ruan, Corrofin (R345858), 8 June 2006, EPA (DAM). L. Muckanagh, Tubber, Corrofin (R368926), 2 May 2006, EPA (EPA). **DERRY: HA 1 -** Upper Creggan Reservoir, Derry (C417173), 17 May 2002 (PHL); inflow to Upper Creggan Reservoir, Derry (C413171), 26 April, and 18 May 2001 also 17 May 2002 (PHL)**: HA 2 -** R. Bessbrook, Limavady (C655212), Roe Valley Park pool, Limavady (C679201), Castle R., Ardmore Bridge, Limavady (C706207) and burn at Largantea picnic area, Formoyle, Coleraine (C738287), 9 June 2000 (Langton, 2002)**: HA 3 -** R. Agivey, Garvagh (C838154), 30 May 2002 (PHL). R. Aghadowey, Ballybritain Bridge (C859212) and Black Bridge, Ballylintagh (C854256), 26 May 2000 (Langton, 2002). Pond, near R. Macquosin, Ballytinagh Road, Coleraine (C854255), 16 May 2004 (PHL). R. Bann, Coleraine (C854304): 20 May, 7 September and 1 October 1999, 19 February, 6 April, 17 and 25 May, 24 June and 8 October 2000, 26 April 2001, 25 April 2010, 27 July and 17 August 2012 (PHL); Coleraine (C858304), 6 August 2000 (PHL). R. Agivey, Glascort Bridge (C907226), 26 May and 16 July 2000 (Langton, 2002). L. Neagh (H9080), no data (McLarnon and Carter, 2000); L. Neagh, Ballyronan (H948862), 27 April 1999, 10 May and 4 July 2000 (Langton, 2002), also 3 May 2001, 15 May 2002, 22 May and 31 May 2011 (PHL). **DONEGAL: HA 38 -** R. Devlin, Dunlewy (B927190), 19 July 2000 (Langton, 2002). L. Veagh, north east shore, GNP, Glenveagh (C038236), 24 June 1985, POD (Heneghan, 1986)**: HA 39 -** Magheralask upland stream, Rashedoge, Letterkenny (C083080), 23 April 2004, JRB (DAM). **DOWN: HA 3 -** R. Leitrim, Leitrim Bridge, Hilltown (J217285), 27 March 1998 (PHL). **DUBLIN: HA 9 -** R. Dodder: Pussy's Leap, Templeogue (O126281), 8 February 1967 (Murray, 1972); Fort Bridge, Bohernabreena (O009242), 5 April 1949 (Reilly, 1951); Clonskeagh Bridge (O174306), 10 June 1968 (Murray, 1972); Landsdown Road Bridge (O180327), 14 May 1946, CFH (Fitzgerald, 1947; Humphries, 1951; Hirvenoja, 1971) and 15 December 1948 (Reilly, 1951); Ballsbridge (O180330), 24 November, 15 December 1948 and 27 February 1949 (Reilly, 1951). **FERMANAGH: HA 35 -** L. Melvin, Garrison (G938518) and Glen R., Garrison (G943522), 29 June 2000 (Langton, 2002)**: HA 36 -** L. Erne, Lower, Boa Island (H108626) and L. Macnean, upper, Belcoo (H042403), 29 June 2000 (Langton, 2002). R. Finn, Lisnanesnagh Bridge (H544337), 26 June 2000 and R. Hollybrook, Lisnaskea (H373310), 27 June 2000 (Langton, 2002). **GALWAY: HA 25 -** L. Derg, Woodford (M794964), 24 May 2003 (PHL). R. Woodford, bridge on R351, Woodford (M732000), 24 May 2003 (PHL)**: HA 30 -** R. Owenriff, Oughterard (M112426), 25 May 2003 (PHL)**: HA 31 -** R. Owentouey,

Tullywee Bridge, Recess (L873474), 18 August 1981 (Hayes, 1991)**: HA 32 -** R. Owenglin, Clifden (L677506) and R. Dawros, Tullywee Bridge, Letterfrack (L730586), 18 August 1981 (Hayes, 1991; Murray, 2005). CNP, Diamond Hill, Letterfrack (L715565), 18 September 1986 (Heneghan 1987). R. Polladirk (L741565), 19 September 1986, Glenmore, Letterbreckaun (L750554), 21 September 1986 (all Heneghan, 1987). **KERRY: HA 21 -** L. Namona, Waterville (V596711), 8 May 2008, EPA (DAM)**: HA 22 -** L. Leane, Killarney (V931886), 22 April 2008, EPA (DAM). R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Caragh, Lower Brida Valley (V740805) and d/s Owenroe R. confluence (V720815), 1975, CD (Dowling *et al.*, 1981). **KILKENNY: HA 15 -** R. Nore, Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (Hayes, 1991). **LIMERICK: HA 25 -** R. Mulkear, d/s Cappamore (R779504), 8 September 1981 (Hayes, 1991). **MAYO: HA 31 -** R. Tooreenacoona, Gleninagh, north of L. Inagh (L809569), 21 April 2004, JRB (DAM)**: HA 32 -** R. Burleemslough, Clapper Bridge Ford, u/s Roonagh L., Killeen (L754759) and R. Bunowen, Louisburg, u/s of bridge (L807807), 5 August 2004, DAM/WM (DAM). L. Fin, Delphi (L841657), 19 May 2005, EPA (DAM). L. Feeagh, Newport (L975983), 25 June 2008, EPA (DAM). R. Owenmore, Drummin (L878744), 21 April 2004, JRB (DAM). L. Moher, Liscarney, Westport (L977766), 24 June 2008, EPA (DAM)**: Clare Island -** R. Dorree, 100m above sea, Maum Island (L708865), 28 April 2000 (Murray and Murray, 2003). **MEATH: HA 7 -** R. Boyne, Stackallen Bridge (N917713), 19 July 1989 (DAM). **TIPPERARY: HA 16 -** R. Suir, Cabragh (S124562), 6 July 1992 (Murray and Lynch, 1992). **TYRONE: HA 1 -** Dennet Stream, Essbeg Bridge, Lisnaskee (H384306), 27 June 2000 (Langton, 2002). R. Glenelly, Leaghs Bridge, Mullaghsallagh (H695940), 17 August 2011 (PHL)**: HA 3 -** L. Neagh, Washing Bay, Coalisland (H903662), 30 May 2002 (PHL). R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WESTMEATH: HA 25 -** L. Ennell, Tudenham (N415466), 27 July 1979 (Murray, 2005)**: HA 36 -** L. Bane, Collinstown (N550712), 26 April and 26 June 2006 (EPA). **WEXFORD: HA 12 -** R. Sow tributary, Garylough Mill, Screen (T076302), 6 May 2006, DAM/WM (DAM).

***Paratrichocladius skirwithensis* (Edwards, 1929)**

ANTRIM: HA 3 - R. Clogh, Clough Mills (D105109) and Glenravel Water, Gartnageeragh, Newtown Crommelin (D147154), 2 July 2000 also R. Main, Randalstown (J084904), 13 October 2000 (Langton, 2002)**: HA 4 -** R. Bush, Stranocum (D009307) and Ballyhoe Bridge (D077294) (Langton, 2002). R. Brymore, Brymore Bridge (D162275), R. Glendun, Drumfresky, Cushendun (D193308) and R. Glenariff (Inver/Glenariff), Cushendall (D215205), 2 July 2000 (Langton, 2002). **CORK: HA 19 -** Cruppoge stream, south east of Kilcorney (W367851), 16 April 2004, JRB (DAM)**: HA 20 -** R. Ilen, Drimoleague (W098454), 24 August

1983 (Hayes, 1991). **DERRY: HA 2 -** [The following records from HA 2 in the year 2000 are by Langton (2002)] R. Ballykelly, Clagan (C628209) and Ballykelly (C623211), 9 June 2000; R. Owenbeg, Feeny picnic area, Feeny (C645058), 26 June 2000; R. Bessbrook, Limavady (C655212), 9 June 2000; R. Roe, Deerpark Wood, Limavaddy (C682203), 9 June 2000; R. Roe, Largy Bridge, Limavaddy (C681202), 14 July 2000; R. Curly, Artikelly Bridge, Limavady (C684247), 9 June 2000; R. Castle, Ardmore Bridge, Limavady (C706207), 9 June 2000**: HA 3 -** R. Agivey, Garvagh (C838154), 30 May 2002 (PHL). R. Aghadowey, Ballybritain Bridge (C859212), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 26 April and 10 June 1999 also 6 April 2000 (PHL). **DOWN: HA 3 -** R. Rocky (d/s R. Shanky confluence), Hilltown (J233277), 26 September 1997 (PHL). **FERMANAGH: HA 35 -** Glen R., Garrison (G943522), 29 June 2000 (Langton, 2002)**: HA 36 -** R. Sruh Croppa, Cuilcagh Mountain (H111329), 29 June 2000 (Langton, 2002). **KERRY: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 and 21 July 1981 (Hayes, 1991; Murray, 2005). R. Caragh, Lower Brida Valley (V740805), d/s Owenroe R. confluence (V720815), Bealalaw Bridge (V715832) and outflow from L. Caragh (V713924), 1975, CD (all Dowling *et al.*, 1981). R. Clydagh, Caherbarnagh (W202842), u/s Clydagh Bridge (W114826) and Knocknagowan (W187837), April 1978 to March 1979 (Ashe, 1982). R. Flesk: d/s Clydagh/Loo confluence (W084814), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), April 1978 to March 1979 (Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), April 1978 to March 1979 (Ashe, 1982). **KILKENNY: HA 15 -** R. Nore, Brownsbarn Bridge (S618391), 28 August 1981 (Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Castletown Bridge (S326930), 27 August 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Carrowinsky, Glenkeen Road Bridge, Carrowinskey (L818724), 9 May 2003 (Murray, 2005). R. Burleemslough, Clapper Bridge Ford, u/s Roonagh L., Killeen (L754759), 5 August 2004, DAM/WM (DAM). R. Bunowen, Louisburg, u/s of bridge, 7 May 2004 and d/s Laghta Bridge, Laghta Eighter (L852751), 30 September 2004, DAM/WM (DAM). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972)**: HA 33 -** R. Glenlassra, Belderg (G023407), 19 August 1983, BPH (Hayes, 1991). **MONAGHAN: HA 36 -** L. Drumlona, Rockcorry (H636176), 4 April 2007, EPA (DAM). **SLIGO: HA 35 -** R. Drumcliff, Glencar (G734430), 19 August 1983 (Hayes, 1991). **TIPPERARY: HA 18 -** L. Curra, Galtymore Mountain (R867242), 26 May 2005, JRB (DAM). **TYRONE: HA 1 -** Dennet Stream, Essbeg Bridge, Lisnaskee (H384306), 27 June 2000 (Langton, 2002). **WICKLOW: HA 10 -** Glencullen R., Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989). R. Avonbeg, Meetings Bridge (T188831), 11 July 1997 (Curran, 2001).

***Paratrichocladius spiesi* Ashe and O'Connor, 2012**
synonym *Paratrichocladius nigritus* (Goetghebuer, 1938)
DERRY: HA 3 - R. Bann, Coleraine (C855304), 20 January 2002 (Langton, 2004 - sub *P. nigritus*).

***Paratrissocladius excerptus* subsp. *excerptus* (Walker, 1856)**
CARLOW: HA 12 - R. Slaney, Rathvilly (S877823), 29 July 1981 and Kildavin (S899597), 28 July 1981 (Hayes, 1991)**: HA 12 -** R. Derreen, Acann Bridge (S900781), 29 July 1981 (Hayes, 1991). **CLARE: HA 25 -** L. Derg, d/s Killaloe (M705715), 18 September 2009, EPA (DAM). **CORK: HA 18 -** R. Blackwater: Ballymacquirk Bridge, Banteer (W382989), Roskeen Bridge, Banteer (W444988) and Lombardstown (W463968), 1 September 1981; Keale Bridge, Millstreet (W294936), 2 September 1981 (all Hayes, 1991)**: HA 20 -** R. Bandon: u/s Ballineen (W331537), Ballineen Bridge (W434538), Castle Bernard (u/s Bandon) (W472546) and 2.5km d/s Bandon (W516569), 27 May and 25 September 1980 (all Morgan, 1982). R. Ilen, Madore (W103419), 24 August 1983 (Hayes, 1991). **DERRY: HA 3 -** Glenullin Bog, Garvagh (C795132), 29 June 2008 (PHL). **DONEGAL: HA 37 -** R. Eany, d/s Eanybeg confluence (G842815), 10 August 1982 (Hayes, 1991)**: HA 39 -** R. Leannan, Kilnacrenan (C145200) and Drumaboden (C165218), 12 August 1982 and Claragh (C197210), 13 August 1982 (Hayes, 1991). R. Crana, Ballymagan (C379344), 15 August 1982 (Hayes, 1991). **KERRY: HA 22 -** R. Flesk, d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), July to November 1978 (Ashe, 1982). **KILKENNY: HA 15 -** R. Nore, Norelands Bridge (S547436), 28 August 1981 (Hayes, 1991). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972)**: HA 34 -** R. Moy, Bellanacurra (G403047), 29 August 1982 and Cloongullaun (G348016), 30 August (Hayes, 1991). **MEATH: HA 8 -** stream-pond, Meadesbrook, Kilmoon (O038594), 9 June 2006 (Murray, 2005). **OFFALY: HA 25 -** R. Little Brosna, Milltown Park (S068907), Brosna Bridge (S077938) and New Bridge (N016088), 2 September 1982 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck, Athleague (M825758), 14 August 1981 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Metal Bridge, Tobercurry (G464138) and Annagh (G466123), 30 August 1982 (Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430), 19 August 1983 (Hayes, 1991). **WESTMEATH: HA 26 -** L. Killinure, Ballaghkeernan Bay (N069445), 24 April 2007, EPA (DAM). **WEXFORD: HA 12 -** R. Boro, Dunamore Bridge, Enniscorthy (S963366), 29 July 1981 (Hayes, 1991). **WICKLOW: HA 10 -** Glencullen R., Knocksink (O218180), 24 July 1987, DEM/DAM (Morgan, 1989).

***Psectrocladius* (*Allopsectrocladius*) *obvius* (Walker, 1856)**

ANTRIM: Rathlin Island - long pool (D148521), 24 July 2000 (Langton, 2002) and outflow stream from L. Craigmacagan (D153596), 5 July 2004 (PHL). **CLARE: HA 25 -** L. Derg, d/s Killaloe (M705715), 18 September 2009, EPA (DAM)**: HA 27 -** L. Bunny, Aughrim, south east shore (R377965), 11 June 2009, EPA (DAM). L. Cullaun, Corrofin mid east shore (R317905), 14 September 2009, EPA (DAM). L. Inchiquin, Corrofin, south east shore (R272894), 16 June 2009, EPA (DAM). L. Muckanagh, Tubber, Corrofin (R368926), 5 September 2006 (EPA) and 14 September 2009, EPA (DAM). L. Rosroe, Newmarket on Fergus, north east shore (R449697), 16 September 2009, EPA (DAM)**: HA 28 -** L. Keagh, Milltown Malbay, south west shore (R100811), 8 July 2009, EPA (DAM). Quarry pond near L. Keagh, Milltown Malbay (R097809), 19 September 2012, DAM/WM (DAM). **CORK: HA 19 -** Carrigdroihid Reservoir, Ashton (W360703), 16 June, 14 August and 16 September 2008, EPA (DAM). **DONEGAL: HA 36 -** L. Tullynasiddagh, Ballyshannon (G983656), 7 July 2009, EPA (DAM)**: HA 38 -** L. Anure, Loughanure, east shore (B818162), 17 June and 12 August 2009, EPA (DAM). L. Veagh, GNP, Glenveagh, Derrylahane, north west shore (C037233), 23 July 1985 (DAM) and north east shore (C039230), 22 August 1985 (Heneghan, 1986). L. Nadourcan, Glenveagh (C054228), 23 July 1985 (Heneghan, 1986). L. Reelan, Reelan (C131272), 6 June 2009, EPA (DAM)**: HA 39 -** L. Fern, Milford (C182247), 18 August 2011 (PHL)**: HA 40 -** bog pool, Rowantree Hill, Moville (C551401), 18 August 2011 (PHL). **DUBLIN: HA 9 -** temporary seasonal pool, University College Dublin, Belfield (O185203), 10 June 1966 (Murray, 1972). Bog pool, Featherbed (O120190), May 1974, CD (Dowling and Murray, 1981). **FERMANAGH: HA 36 -** Dummys L., Magheraveely (H488276), 28 June 2000 and stream at Lisnaskea (H384306), 27 June 2000 (Langton, 2002). **GALWAY: HA 25 -** L. Derg, Woodford (M794964), 24 May 2003 (PHL)**: HA 30 -** L. Corrib (M1545), 1 April 1964, AJOS (Murray, 1972)**: HA 31 -** L. Ahalia, Maam Cross (L971402), 18 June 2009, EPA (DAM). L. Anaserd, Ballyconneely (L605443), 20 June 2006, EPA (DAM). L. Shindilla, Derreennacreeva (L958460), 13 September 2007, EPA (DAM)**: HA 32 -** L. Tully, Tully Cross (L695618), 10 September 2007, EPA (DAM). Pond, Diamond Hill, CNP, Letterfrack (L726569), 21 September 1986 (Heneghan, 1987; Murray, 2005)**: KERRY: HA 21 -** L. Currane, Waterville (V535664), 10 September 2008, EPA (DAM)**: HA 22 -** L. Cummernamuck, Killorglin (V745897), 20 June, 18 July and 9 September 2008, EPA (DAM). R. Flesk, d/s Whitebridge (V987900) and d/s New Bridge (V963885), August 1981 (Ashe, 1982). **LIMERICK: HA 24 -** L. Gur, Holycross (R646413), 13 June and 28 July 2009, EPA (DAM). **LONGFORD: HA 26 -** L. Forbes, Cloonard, Newtownforbes (N084821), 27 August 2008, EPA (DAM). **MAYO: HA 26 -** L. Nanoge, Urlaur (M506903), 23 September 2008, EPA (DAM)**: HA 30 -** L. Carra, Keel Bridge, Ballinrobe (M165680), 28 July and 26 September 2008, EPA (DAM)**: -HA 33 -** L.

Cross, Drumreagh, Belmullet, west shore (F645293), 14 August 2008 and north east shore (F651299), 17 September 2008, EPA (DAM). Bog pool, Achill Island (F712008), 5 August 2004 and L. Bunacurry, Achill Island (F695048), 29 September 2004, DAM/WM (DAM). R. Owenmore, Bangor Erris (F863228), 18 August 1983 (Hayes, 1991; Murray, 2005). Bog pools, Glenamoy (F896345), May and August 1973, CD (Dowling, 1975; Dowling and Murray, 1981)**: HA 34 -** L. Conn, Illannaglashy (G207070), 20 August 2008, EPA (DAM). L. Levally, Massbrook (G146043), 23 September 2008, EPA (DAM)**: Clare Island -** pond east of Maum road (L710863), 5 June 2002 and wetland, Ballytouhy (L696882), 20 August 2002; Creggan L., Lecarrow (L689857), 11 June and 5 October 1998, 10 June, 7 July, 13 August, 7 September and 6 October 1999 (Fahy, 2002) also 21 August 2002 (Murray and Murray, 2003). **MEATH: HA 7 -** tailings pond, Randalstown, Navan (N845714), 12 September 1994 (DAM), 22 June and 29 August 1995 (Finnegan, 1998) and 29 March 1996 (DAM). **MONAGHAN: HA 36 -** Summerhill L., Magheraveely (H490280), 28 June 2000 (Langton, 2002). **ROSCOMMON: HA 26 -** L. Glinn, Loughglinn, Castlerea (M629870), 12 June 2008, EPA (DAM).

***Psectrocladius* (*Allopsectrocladius*) *platypus* (Edwards, 1929)**

CAVAN: HA 36 - L. Ardan, Milltown, Belturbet (H354124), 18 September 2007, EPA (DAM). **CLARE: HA 27 -** L. Rosroe, Newmarket on Fergus, north east shore (R448697), 16 June 2009, EPA (DAM). L. Atedaun, Corrofin, north west shore (R294885), 16 June 2009, EPA (DAM). **CORK: HA 19 -** L. Aderry, Castlemartyr (W935730), 4 June 1969, NH (Bracken and Murray, 1973). L. Gouganebarra, Inchegeelagh (W009060), 27 July 1968 (Murray, 1972, 2005)**: HA 20 -** L. Curraghalicky, Drinagh, Dunmanway (W234046), 17 June 2008, EPA (DAM). **DERRY: HA 3 -** Glenullin Bog, Garvagh (C795132), 7 June 2008 (PHL). **DONEGAL: HA 37 -** Carn L., Blue Stack Mountains (G871886), 10 May 2005, JRB/MC and 27 July 2005, JRB (DAM)**: HA 38 -** L. Nabuckan, Grogan More (B850184), 27 July 2005, JRB (DAM). L. Nadourcan, Glenveagh (C054228), 18 July 2000 (Langton, 2002). **DUBLIN: HA 9 -** bog pool, Featherbed (O120190), July 1974, CD (Dowling, 1975; Dowling and Murray, 1981). **GALWAY: HA 32 -** L. Fadda, Beaghcauneen (L668455), 11 September 2007, EPA (DAM). **KERRY: HA 21 -** Eagles L., Knocknagantee (V674728), 9 August 2005, JRB (DAM). **LEITRIM: HA 35 -** L. Nabrack, Crocknagapple (G860477), 4 August 2005, JRB/MC (DAM). **MAYO: HA 33 -** bog pool, Sraheen, Achill Island (F716005), 6 May 2004, DAM/WM (DAM). Bog pools, Glenamoy (F896345), April to June 1973, CD (Dowling, 1975; Dowling and Murray, 1981)**: Clare Island -** pond east of Maum road (L710863), 5 June and 20 August 2002 (Murray and Murray, 2003; Murray, 2005). Creggan L., Lecarrow (L689857), 11 June, 13 July, 10 August, 1 and 14 September 1998, 10 June, 7 and 14 July, 13 August, 14 September and 6 October 1999 (all Fahy, 2002). L. Poirtin Fuinch (L706857), 2 June, 1 and 14 September, 5

October and 3 November 1998, 5 May, 2 and 10 June, 7 July and 14 September 1999 (Fahy, 2002). Bogpool, east face of Knockmore (L683857) and pond east of Signal Tower, 21 August 2002 (Murray and Murray, 2003). **OFFALY: HA 25 -** bog pool, Clara (N244301), 20 March 1985, JR (PJA/NMI). **WICKLOW**: **HA 10 -** L. Ouler, Tonelagee (O091023), 8 August 2005, JRB (DAM).

***Psectrocladius* (*Mesopsectrocladius*) *barbatipes* Kieffer, 1923**

ANTRIM: Rathlin Island - pool (1) east of lighthouse (D163521), 24 July 2000 (Langton, 2002); pool (3) east of lighthouse (D156516), 7 July 2004 (PHL). **CAVAN: HA 26 -** L. Sheelin, Orangefield (N417835), 21 January 1975 (DAM). L. Derrybrick, Milltown, Belturbet (H346117), 18 September 2007, EPA (DAM). Mill Lake, Killashandra (H315060), 3 September 2007, EPA (DAM). **CLARE: HA 27 -** L. Bunny, Aughrim, south east shore (R377965), 14 July and 14 September 2009, EPA (DAM). L. Cullaun, Corrofin, mid east shore (R317905), 14 September 2009, EPA (DAM). L. Dromore, Ruan, Corrofin (R345858), 8 June 2006, EPA (DAM). L. Muckanagh, Tubber, Corrofin, south east shore (R370922), 14 September 2009, EPA (DAM)**: HA 29 -** L. Skeardeen, Kilcorkan (R388991), 17 June 2009, EPA (DAM). **CORK: HA 20 -** L. Skeagh (Schull Reservoir), Schull (V937338), 27 August and 17 September 2008, EPA (DAM). **DONEGAL: HA 1 -** L. Finn, Fintown, Glenties (B911018), 23 July 2009, EPA (DAM)**: HA 36 -** L. Vearty, Ballyshannon (G995658), 8 July 2009, EPA (DAM)**: HA 38 -** L. Scalpachore, Cruit Island (B730216), 19 July 2000 (Langton, 2002). L. Dunglow, The Rosses, west shore (B782119), 17 June and 5 August 2009, EPA (DAM). L. Anure, Loughanure (B818162), 17 June, 12 August and 7 September 2009, EPA (DAM). L. Nasnahida, Doocharry, Dunglow (B852076), 17 June, 6 August and 10 September 2009, EPA (DAM). L. Veagh, GNP, north east shore, Glenveagh (C039230), 22 July 1985 (Heneghan, 1986; Murray, 2005). L. Nadourcan, GNP, Glenveagh (C054228), 18 July 2000 (Langton, 2002). L. Kiltoris, Dawros, Ardara (G675976), 30 July and 7 September 2009, EPA (DAM). L. Voriskey, The Rosses (B762176), 19 July 2000 (Langton, 2002). **DUBLIN: HA 9 -** bog pool, Featherbed (O120190), April to September 1974, CD (Dowling, 1975; Dowling and Murray, 1981)**: HA 29 -** L. Rea, east shore, Loughrea (M624153), 25 May 2003 (PHL)**: HA 30 -** L. Anillaun, Maam Cross (L980470), 19 April, 8 June and 5 September 2007, EPA (DAM). L. Ballyquirke, Moycullen (M232317), 14 September 2007, EPA (DAM). L. Beaghcauneen, Ballinaboy (L679470), 18 July and 12 September 2007, EPA (DAM). L. Corrib Lower, Moycullen (M271360), 11 June and 18 September 2007, EPA (DAM). L. Ross, Moycullen (M188365), 5 September 2007, EPA (DAM). R. Owenriff, Oughterard (M112426), 25 May 2003 (PHL)**: HA 31 -** L. Anaserd, Ballyconneely (L605443), 6 June, 17 July and 11 September 2007, EPA (DAM). L. Ardderry, Maam Cross (L982458), 17 September 2007, EPA (DAM). L.

Aunwillan, Carraroe (L936255), 7 June 2007, EPA (DAM). L. Ballynahinch, Ballynahinch (L777478), 23 July and 13 September 2007, EPA (DAM). L. Derryclare, Recess (L825485), 6 June, 16 July and 13 September 2007, EPA (DAM)**: HA 32 -** L. Enask, Beaghcauneen (L662468), 17 July 2007, EPA (DAM). L. Fadda, Beaghcauneen (L668455), 6 June, 17 July and 11 September 2007, EPA (DAM). L. Tully, Tully Cross (L695618), 10 September 2007, EPA (DAM). L. Nambrackmore, Ballinaboy, Toombeola (L716454), 6 June, 27 July and 12 September 2007, EPA (DAM). L. Pollacappul, Kylemore (L754582), 9 July 2007, EPA (DAM). L. Kylemore, Letterfrack (L771582), 10 September 2007, EPA (DAM). **KERRY: HA 21 -** L. Cloonaghlin, Waterville (V611708), 8 May 2008, EPA (DAM). L. Currane, Waterville (V535664), 18 June 2008, EPA (DAM). L. Inchiquin, Kenmare (V837629), 1 and 17 September 2008, EPA (DAM). L. Namona, Waterville (V596711), 19 June 2008, EPA (DAM)**: HA 22 -** L. Cummernamuck, Killorglin (V745897), 18 July and 9 September 2008, EPA (DAM). L. Guitane, Crohane, Killarney (W025846), 26 June and 8 July 2008, EPA (DAM). Muckross Lake, Killarney, Coleen Bawn (V950857) and Dundag Bay (V964858), July 1973 (Douglas and Murray, 1980). Upper Lake, Killarney, Gortroe (V918818), July 1973 (Douglas and Murray, 1980) and Upper Lake (V909821), 9 September 2008, EPA (DAM). L. Cam, Castlegregory (Q597079), 29 August 2008, EPA (DAM). **LEITRIM: HA 26 -** L. Boderg, Dromod (N020910), 25 June 2008, EPA (DAM)**: HA 35 -** L. Glenade, Glenade, Manorhamilton (G831457), 22 July 2008, EPA (DAM). **MAYO: HA 33 -** bog pools, Glenamoy (F896345), April to July 1973, CD (Dowling, 1975; Dowling and Murray, 1981). **MONAGHAN: HA 36 -** L. Annaghmakerrig, Newbliss (H585205), 19 September 2006, EPA (DAM). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168), 30 August 1982 (Hayes, 1991). **WESTMEATH: HA 26 -** L. Derravaragh, Crookedwood (N468634), 30 August 2007, EPA (DAM).

***Psectrocladius* (*Monopsectrocladius*) *calcaratus* (Edwards, 1929)**

CORK: HA 19 - L. Gouganebarra, Inchegeelagh (W009060), 27 July 1968 (Murray, 1972). **DONEGAL: HA 37 -** L. Eske, Donegal (G973844), 8 June 2009, EPA (DAM)**: HA 38 -** L. Dunglow, The Rosses, west shore (B782119), 17 June 2009, EPA (DAM) and south east shore (B783112), 12 August 1982 (BPH). L. Nasnahida, Doocharry, Dunglow (B852076), 17 June and 10 September 2009, EPA (DAM). L. Veagh, boathouse near Castle, Glenveagh (C022211), 21 August 1985 (Heneghan, 1986); L. Veagh, north east shore (sweep), Glenveagh (C034233), 19 August 1985 (Heneghan, 1986; Murray, 2005). **DUBLIN: HA 9 -** Upper Reservoir, Bohernabreena (O095219), 14 April 1947 (Fitzgerald, 1947). Bog pool, Featherbed (O120190), July 1974, CD (Dowling, 1975; Dowling and Murray, 1981). **GALWAY: HA 30 -** L. Corrib Lower, Moycullen (M271360), 11 June 2007, EPA (DAM)**: HA 30 -** L. Maumwee, Maam Cross (L977485), 19 May 2005 and 17 September 2007, EPA (DAM)**: HA 31 -** L. Ardderry,

Maam Cross (L982458), 17 September 2007, EPA (DAM)**: HA 32 -** Diamond Hill stream, CNP, Letterfrack (L715565) and south slope of Diamond Hill (L728565), 18 September 1986 (Heneghan, 1987). L. Nambrackmore, Ballinaboy-Toombeola (L716454), 12 September 2007, EPA (DAM). **KERRY: HA 21 -** L. Cloonaghlin, Waterville (V611708), 19 June 2008, EPA (DAM)**: HA 22 -** Doolough, Muckross Penninsula (V949860), 5 July 1973 (Douglas and Murray, 1980). L. Guitane, Crohane, Killarney (W025846), 14 October 1973 (Douglas and Murray, 1980). L. Leane, Killarney: Brickeen (V937850), 3 July 1973; Castlelough Bay, north shore (V966866), 27 June 1973 (leg. JPOC) and 30 July 1973 (Douglas and Murray, 1980); Muckross Boathouse (V965866), 29 August 1987, NOM (LJH). Muckross Lake, Killarney, Dundag Bay (V964858), 1973 (Douglas and Murray, 1980) and (V950853), 18 September 2008, EPA (DAM). Upper Lake, Killarney (V909821), 9 September 2008, EPA (DAM). **LEITRIM: HA 35 -** L. Nabrack, Crocknagapple (G860477), 4 August 2005, JRB/MC (DAM). **MAYO: HA 33 -** bog pools, Glenamoy (F896345), July 1973, CD (Dowling, 1975; Dowling and Murray, 1981).

***Psectrocladius* (*Psectrocladius*) *barbimanus* (Edwards, 1929)**

CAVAN: HA 7 - L. Mullagh, Mullagh (N680856), 27 May 1968 (Murray, 1972, 2005). **CLARE: HA 27 -** L. Rosroe, Newmarket on Fergus, north east shore (R449697), 16 September 2009, EPA (DAM). L. Cullaunyheeda, Kilkishen (R484746), 12 June 2009, EPA (DAM). **CORK: HA 19 -** L. Gouganebarra, Inchegeelagh (W009060), 18 June 1966 (Murray, 1972)**: HA 21 -** L. Avaul, Glengarrif (V910553), 22 September 1969 and L. Reenydonegan, Bantry (W000515), 9 June 1969, NH (Bracken and Murray, 1973). **DERRY: HA 3 -** Howell's Tarn, Ballywildrick, Coleraine (C766325), 22 April 2001 also 7 and 21 April, 7 July 2002 (PHL). **DONEGAL: HA 38 -** L. Veagh, north east shore, Glenveagh (C038232), 24 July 1985 (Heneghan, 1986). **DUBLIN: HA 9 -** pond, University College Dublin, Belfield (O185300), 25 April 1973 (DAM). **GALWAY: HA 30 -** L. Corrib Lower, Moycullen (M271360), 11 June 2007, EPA (DAM)**: HA 32 -** L. Nambrackmore, Ballinaboy-Toombeola (L716454), 5 April 2007, EPA (DAM). **KERRY: HA 22 -** Muckross Lake, Dundag Bay (V964858), 1973 (Douglas and Murray, 1980). **LIMERICK: HA 24 -** L. Gur, Holycross (R646413), 13 June 2009, EPA (DAM). **SLIGO: HA 35 -** L. Arrow, Ballinafad (G789123), 29 April 2008, EPA (DAM).

***Psectrocladius* (*Psectrocladius*) *bisetus* Goetghebuer, 1942**

DERRY: HA 3 - Glenullin Bog, Garvagh (C795132), 7 June 2008 (PHL). **DONEGAL: HA 36 -** L. Vearty, Ballyshannon (G995658), 8 July 2009, EPA (DAM)**: HA 37 -** L. Eske, Donegal (G973844), 8 September 2009, EPA (DAM)**: HA 38 -** L. Dunglow, The Rosses, west shore

(B782119), 17 June and 5 August 2009, EPA (DAM). "Duck Pond", GNP, Glenveagh (C023214), 22 July 1985 (Heneghan, 1986; Murray, 2005). **LEITRIM: HA 26 -** L. Natire, (G966340), 3 August 2005, JRB/MC (DAM). **WICKLOW: HA 10 -** R. Glenealo, Glendalough (T090962) and outflow from Upper Glendalough Lake, WMNP (T109964), 16 July 1996, EME/DAM (McEntee, 1997).

***Psectrocladius* (*Psectrocladius*) *fennicus* Storå, 1939**

CLARE: HA 27 - L. Bunny, Aughrim, south east shore (R377965), 5 September 2006, EPA (EPA). L. Muckanagh, Tubber, Corrofin (R368926), 3 April 2006, EPA (EPA)**: HA 28 -** L. Acrow, Lisscasey (R193687), 4 April 2006, EPA (DAM). **CORK: HA 19 -** L. Gouganebarra, Inchegeelagh (W009060), 21 May 1966 (Murray, 1972). **DONEGAL: HA 37 -** L. Eske, Donegal (G973844), 14 July 2009, EPA (DAM)**: HA 38 -** L. Altercan, The Rosses (B755158), L. Mulladerg, The Rosses (B775199), L. Dunglow, Dunglow, east shore (B787117) and L. Nacung, Upper, Dunlewy (B904191), 19 July 2000 (Langton, 2002). L. Veagh, GNP: boathouse near Castle (C022211), 21 July 1985 (Heneghan, 1986; Murray, 2005); north east shore near Visitor Centre (C033223), 19 July 2000 (Langton, 2002) and north east shore (C038233), 24 July 1985 (Heneghan, 1986). L. Greenan, Loughsalt, Kilmacrennan (C117262), 16 June 2009, EPA (DAM)**: HA 39 -** L. Gartan, Church Hill, north shore (C065173), 18 July 2000 (Langton, 2002)**: HA 40 -** L. Naminn, Cloonmany (C400423), 18 August 2011 (PHL). Bog pool, Rowantree Hill, Moville (C551401), 18 August 2011 (PHL). **GALWAY: HA 30 -** L. Anillaun, Maam Cross (L980470), 19 April and 5 September 2007, EPA (DAM)**: HA 31 -** L. Ahalia, Maam Cross, north east shore (L971402), 18 June and 23 September 2009, EPA (DAM). L. Ardderry, Maam Cross (L998458), 25 May 2003 (PHL): **HA 32 -** pond, Diamond Hill, CNP, Letterfrack (L727568), 18 September 1986 (Heneghan, 1987). **KERRY: HA 21 -** L. Cloonaghlin, Waterville (V611708), 19 June 2008, EPA (DAM). L. Currane, Waterville (V535664), 9 May 2008, EPA (DAM). Eagles L., Knocknagantee (V674728), 9 August 2005, JRB (DAM). L. Inchiquin, Kenmare (V837629), 1 and 17 September 2008, EPA (DAM)**: HA 22 -** Killarney (V950890), 1928, FEW (Edwards, 1929 - sub *P. sordidellus* var (Murray, 1972)). L. Leane, Killarney, Brickeen (V937850), 3 July 1973 (Douglas and Murray, 1980). Muckross Lake, Killarney, Dundag Bay (V964858), 12 July 1972 (Murray, 2005); Muckross Lake (V950853), 24 April, 16 July, and 18 September 2008, EPA (DAM). **MAYO: HA 33 -** L. Acorrymore, Achill Island (F578057), 7 April 2008, EPA (DAM). Bog pools, Glenamoy (F896345), April and August 1973, CD (Dowling, 1975; Dowling and Murray, 1981)**: Clare Island -** Creggan L., Lecarrow (L689857), 6 July 1998 and 13 August 1999 (Fahy, 2002). L. Poirtin Fuinch (L706857), 11 June, 6 July, 1 and 14 September, 13 October and 1 December 1998, 7 July, 7 and 14 September, 6 October and 2 November 1999 (all Fahy, 2002). **SLIGO:**

HA 35 - L. Easky, Ox Mountain (G446230), 17 July 2008, EPA (DAM). **TYRONE: HA 1 -** L. Moor, Altishane, Strabane (H446984), 17 August 2011 (PHL).

***Psectrocladius* (*Psectrocladius*) *limbatellus* (Holmgren, 1869)**

ANTRIM: Rathlin Island - long pool (D148521), 24 July 2000 (Langton, 2002). Outflow stream from L. Craigmacagan (D153596), 5 July 2004 (PHL). **CLARE: HA 27 -** L. Muckanagh, Tubber, Corrofin (R368926), 2 May and 2 August 2006 (EPA)**: HA 28 -** quarry pond near L. Keagh, Milltown Malbay (R097809), 19 September 2012, DAM/WM (DAM). **DERRY: HA 2 -** pond, Ballykelly Hospital, Limavady (C623224), 15 May 2000 (Langton, 2002)**: HA 3 -** Glenullin Bog, Garvagh (C795132), 29 June 2008 (PHL). Coleraine (C858304), 2 May 2000 (PHL). **DONEGAL: HA 1 -** L. Mourne, Ballybofey (H069900), 20 April 2009, EPA (DAM)**: HA 36 -** L. Golagh, Ballyshannon (G965655), 7 July 2009, EPA (DAM). L. Unshin, Ballyshannon (G951637), 6 July 2009, EPA (DAM)**: HA 37 -** L. Eske, Donegal (G973844), 14 July 2009, EPA (DAM)**: HA 38 -** L. Anure, Loughanure (B817166), 19 July 2000 (Langton, 2002) also L. Anure, east shore (B818162), 12 August and 7 September 2009, EPA (DAM). L. Keel, Crolly (B848162), 7 September 2009, EPA (DAM). L. Nasnahida, Doocharry, Dunglow (B852076), 7 April 2009, EPA (DAM). L. An tSeisigh, Portnablagh, Sheephaven (C043361), 1 April 2009, EPA (DAM). L. Greenan, Loughsalt, Kilmacrennan (C117262), 29 April 2009, EPA (DAM). L. Reelan, Reelan (C131272), 6 April 2009, EPA (DAM). L. Kinny, Fanad (C204442), 6 June 2009, EPA (DAM). L. Voriskey, The Rosses (B762176), 19 July 2000 (Langton, 2002)**: HA 39 -** L. Nambraddan, GNP, Glenveagh (C022193), 31 July 1985 (Heneghan, 1986)**: HA 40 -** bog pool, Rowantree Hill, Moville (C551401), 18 August 2011 (PHL). **DUBLIN: HA 9 -** pool (temporary), University College Dublin, Belfield (O185203), 13 April 1981, PJA (Murray, 2005). **GALWAY: HA 30 -** L. Anillaun, Maam Cross (L980470), 1 August 2007, EPA (DAM). L. Corrib Lower, Moycullen (M271360), 18 September 2007, EPA (DAM): **HA 32 -** Pond, CNP, Diamond Hill, Letterfrack (L727568), 18 September 1986 (Heneghan, 1987). **KERRY: HA 21 -** L. Cloonaghlin, Waterville (V611708), 8 May 2008, EPA (DAM). **MAYO: HA 30 -** L. Carra, Keel Bridge, Ballinrobe (M165680), 28 April 2008, EPA (DAM); L. Carra, Keel Bridge, Ballinrobe (M165680), 28 July and 26 September 2008, EPA (DAM)**: HA 32 -** L. Doo, Delphi, north east shore (L834689), 22 August 2002, DAM/WM (DAM). L. Nahaltora, Cregganbaun (L794745), 30 September 2004, DAM/WM (DAM)**: Clare Island -** pond east of Signal Tower (L658859), 21 August 2002 (Murray and Murray, 2003). **MEATH: HA 7 -** artificial tank, Ardsallagh, Navan (N896635), 23 April 2000 (DAM)**: HA 8 -** rainwater barrel, Meadesbrook, Kilmoon (O040594), 4 and 8 April 2001 (DAM). **OFFALY: HA 25 -** bog lake, Turraun (N172185), 3 January 1998, WT (DAM). **SLIGO: HA 34 -** L. Talt, Gleneask (G402151), 10 April 2008, EPA

(DAM). **WATERFORD: HA 17 -** L. Carrigavantry, Tramore (S548022), 21 April 2009, EPA (DAM). **WICKLOW: HA 10 -** L. Bray Lower, Glencree (O140163), 16 June 2009, EPA (DAM).

***Psectrocladius* (*Psectrocladius*) *octomaculatus* Wülker, 1956**

DONEGAL: HA 38 - bog pool, GNP, Glenveagh (C040203), 20 May 1986 (Heneghan, 1986; Murray, 1996). **MAYO: HA 32 -** tributary to R. Bunowen, Laghta Eighter (L867739), 7 May 2004 (Murray, 2005). L. Fin, Delphi (L841657), 12 July 2006, EPA (DAM).

***Psectrocladius* (*Psectrocladius*) *oligosetus* Wülker, 1956**

CLARE: HA 27 - L. Inchiquin, Corrofin (R270895), 4 July 2006, EPA (DAM). **CLARE: HA 28 -** quarry pond near L. Keagh, Milltown Malbay (R097809), 19 September 2012, DAM/WM (DAM). **CORK: HA 20 -** L. Skeagh (Schull Reservoir), Schull (V937338), 17 June 2008, EPA (DAM). **DONEGAL: HA 36 -** L. Vearty, Ballyshannon (G995658), 8 July 2009, EPA (DAM)**: HA 38 -** L. Scalpachore, Cruit Island (B730216), 19 July 2000 (Langton, 2002). L. Dungloe, south east shore (B783112), 12 August 1982, BPH (DAM). "Duck Pond", GNP, Glenveagh (C023214), 19 August 1985 (Heneghan, 1986; Murray, 1996). L. Nadourcan, Glenveagh (C054228), 18 July 2000 (Langton, 2002). **GALWAY: HA 30 -** L. Lettercraffroe, Oughterard (M056376), 5 September 2007, EPA (DAM)**: HA 31 -** L. Nahasleam, Maam Cross (L972440), 6 April 2006, EPA (DAM). **KERRY: HA 22 -** L. Cummernamuck, Killorglin (V745897), 20 June, 18 July and 9 September 2008, EPA (DAM). L. Guitane, Crohane, Killarney (W025846), 8 July 2008, EPA (DAM). Upper Lake, Killarney (V909821), 24 June and 9 September 2008, EPA (DAM). **MAYO: HA 33 -** L. Acorrymore, Achill Island (F578057) and bog pool, Achill Island (F712008), 5 August 2004 also pool/stream, Camport, Achill Island (L677982), 29 September 2004, DAM/WM (DAM)**: Clare Island -** pond east of Maum road (L710863), 28 April, 5 June and 20 August 2002 (Murray and Murray, 2003; Murray, 2005). **MONAGHAN: HA 36 -** L. Annaghmakerrig, Newbliss (H585205), 26 July 2006, EPA (DAM).

***Psectrocladius* (*Psectrocladius*) *oxyura* Langton, 1985**

ANTRIM: HA 4 - Altnahinch Reservoir, Ballymoney (D120234), 22 August 2001 (PHL). **CLARE: HA 27 -** L. Bunny, Aughrim, south east shore (R377965), 2 May 2006, EPA (EPA). L. Inchicronan, Crusheen, west basin (R391860), 9 July 2009, EPA (DAM). L. Rosroe, Newmarket on Fergus, north east shore (R449697), 16 September 2009, EPA (DAM). **CORK: HA 19 -** Carrigdroihid Reservoir, Ashton (W360703), 3 April, 14 August and 16 September 2008, EPA (DAM). Iniscarra Reservoir, Coachford (W477717), 16 September 2008, EPA (DAM). **DERRY**: **HA 2 -** Binevenagh pond, Coleraine (C691305), 18 May 2000 (Langton,

2002) also 25 August 2001 and 8 August 2002 (PHL)**: HA 3 -** Glenullin Bog, Garvagh (C795132), 18 August 2007 (PHL). **DONEGAL: HA 37 -** Carn L., Blue Stack Mountains (G871886), 27 July 2005, JRB (DAM). L. Shinvagh, Carricode (H005675), 28 March 2004 (PHL)**: HA 38 -** L. Dunglow, Dunglow, east shore (B787117), 19 July 2000 (Langton, 2002). L. Nabuckan, Grogan More (B850184), 10 May 2005, JRB (DAM). L. Nacung, Upper, Dunlewy (B904191) and L. Dunlewey, Dunlewy (B926193), 19 July 2000, PHL (Langton, 2002). L. An tSeisigh, Portnablagh (Sheephaven) (C043361), 28 July 2009, EPA (DAM). L. Voriskey, The Rosses (B762176), 19 July 2000 (Langton, 2002)**: HA 40 -** bog pool, Rowantree Hill, Moville (C551401), 28 March 2004 (PHL). **DOWN: HA 3 -** R. Shanky, left fork, Hilltown (J221243), 18 June 1997 (PHL). R. Rocky (d/s R. Shanky confluence), Hilltown (J233277), 29 May 1998 (PHL). Glenaveagh stream, Glenaveagh Bridge (J255284), 29 May 1998 (PHL). **FERMANAGH: HA 36 -** L. Atona, Cuilcagh Mountain (H110294), 29 June 2000 (Langton, 2002). L. Erne Lower, Brocagh Point, Boa Island (H108626), 17 August 2011 (PHL); L. Erne Lower, Black Bay (H072639), 28 March 2004 (PHL). **GALWAY: HA 25 -** L. Derg, Woodford (M794964), 24 May 2003 (PHL)**: HA 31 -** L. Anaserd, Ballyconneely (L605443), 4 April 2007, EPA (DAM)**: HA 32 -** L. Aughrusbeg, Cleggan (L557582), 3 April 2007, EPA (DAM). L. Ballynakill, Cleggan (L639581), 11 September 2007, EPA (DAM). Pond, near Administration Centre, CNP, Letterfrack (L714573), 17 September 1986, LJH (Murray, 2005). **KERRY: HA 23 -** L. Gill, Castlegregory (Q603139), 29 April 2008, EPA (DAM). **LEITRIM: HA 26 -** L. Bofin, Dromod (N049894), 24 June 2008 and Rinnafarna (N036891), 29 July 2008, EPA (DAM)**: HA 35 -** L. Sandy, Crocknagapple (G891448), 4 August 2005, JRB/MC (DAM). **LONGFORD: HA 26 -** L. Forbes, Cloonard, Newtownforbes (N084821), 25 June and 27 August 2008, EPA (DAM). **MAYO: HA 26 -** L. Nanoge, Urlaur (M506903), 18 June 2008, EPA (DAM)**: HA 30 -** L. Aille, Aille, Westport (M071807), 24 June 2008, EPA (DAM)**: HA 34 -** L. Alone, Ox Mountains (G367157), 5 August 2005, JRB/MC (DAM). L. Levally, Massbrook (G146043), 23 September 2008, EPA (DAM). **ROSCOMMON: HA 26 -** L. Cavetown, Boyle (M832974), 9 September 2008, EPA (DAM). **SLIGO: HA 26 -** L. Gara, Monastredan (M708996), 5 September 2008, EPA (DAM). **TYRONE: HA 1 -** R. Glenelly, Crannagh Bridge, Crannagh (H594926), 17 August 2011 (PHL).

***Psectrocladius* (*Psectrocladius*) *psilopterus* (Kieffer, 1906)**

ANTRIM: HA 4 - Dungonnell Dam, Newtown Crommelin (D193170), 20 June 2000 (Langton, 2002). **CAVAN: HA 36 -** L. Garty, Arvagh (N278978), 7 June and 18 July 2007, EPA (DAM). **CLARE: HA 25 -** L. Derg, Terryglass (M861008), 20 April 2009 and Mountshannon (R718861), 18 September 2009, EPA (DAM). L. Graney, Drumandora, west shore (R553938), 15 June 2009, EPA (DAM). L. Alewnaghta, Whitegate, west shore (R758908), 20 April 2009

and north east shore (R764914), 23 September 2009, EPA (DAM). L. Atorick, Woodford (R637964), 24 May 2003 (PHL)**: HA 27 -** L. Bridget, Derrymore, Badyke, east shore (R558797), 17 September 2009, EPA (DAM). L. Bunny, Aughrim, south east shore (R377965), 14 July and 14 September 2009, EPA (DAM). L. Cullaun, Corrofin, mid east shore (R317905), 16 June 2009, EPA (DAM). L. Dromore, Ruan, Corrofin (R352864), 16 June 2009, EPA (DAM). L. Muckanagh, Tubber, Corrofin (R368926), 2 May, 3 July and 2 August 2006 and south east shore (R370922), 14 September 2009, EPA (DAM). L. Cullaunyheeda, Kilkishen (R484746), 12 June 2009, EPA (DAM). L. Atedaun, Corrofin (R297884), 21 April, 16 June and 14 July 2009, EPA (DAM)**: HA 28 -** L. Doo, Milltown Malbay, north west shore (R114722), 15 September 2009, EPA (DAM). L. Keagh, Milltown Malbay, north shore (R100813), 15 September 2009, EPA (DAM). L. Naminna, Boolteagh (R179708), 11 June and 15 September 2009, EPA (DAM)**: HA 29 -** L. Skeardeen, Kilcorkan (R388991), 7 April and 17 June 2009, EPA (DAM). **CORK: HA 19 -** L. Allua, Ballingeary (W180652), 20 August 2008, EPA (DAM)**: HA 20 -** L. Coolkllure, Dunmanway (W177539), 7 April and 11 August 2008, EPA (DAM). L. Skeagh (Schull Reservoir), Schull (V937338), 27 August and 17 September 2008, EPA (DAM). L. Tooreen, Crookhaven (V790259), 10 April, 17 June and 17 September 2008, EPA (DAM). R. Bandon, Long Bridge, Dunmanway (W242631), 27 May and 30 June 1980 (Morgan, 1982). R. Ovane, Pierson's Bridge (W023454), 24 August 1983 (Hayes, 1991). **DONEGAL: HA 36 -** L. Unshin, Ballyshannon (G951637), 6 July 2009, EPA (DAM). L. Avehy, Belalt (H043664), 27 April 2002 (PHL)**: HA 37 -** Carn L., Blue Stack Mountains (G871886), 10 May and 27 July 2005, JRB (DAM)**: HA 38 -** L. Altercan, The Rosses (B755158), 19 July 2000 (Langton, 2002). L. Dunglow, The Rosses, south east shore (B783112), 12 August 1982, BPH (DAM) and west shore (B782119), 17 June and 5 August 2009, EPA (DAM). L. Anure, Loughanure, east shore (B818162), 12 August and 7 September 2009, EPA (DAM). R. Gweedore, outflow from L. Anure, Crolly (B827184), 19 July 2000 (Langton, 2002). L. Keel, Crolly (B848162), 7 September 2009, EPA (DAM). L. Nabuckan, Grogan More (B850184), 10 May 2005, JRB (DAM). L. Nacung, Upper, Dunlewy (B904191), L. Dunlewey, and R. Devlin, Dunlewy (B927190), 19 July 2000 (Langton, 2002). L. Veagh, GNP, south shore (C002187), 15 August 1985 (Heneghan, 1986) and boathouse near Castle, Glenveagh (C022211), 9 September 2009, EPA (DAM). Duck Pond, GNP, Glenveagh (C023214), 24 August 1985 (Heneghan, 1986). Inflow stream at north east shore of L. Veagh, Glenveagh, GNP, 50m from lake (C030218), June 1989 (Hernan, 1991). R. Owencarrow, d/s road bridge, Glenveagh (C043235), 18 July 2000 (Langton, 2002). L. Nambraddan, GNP, Glenveagh (C022193), 31 July 1985 (Heneghan, 1986; Murray, 2005). L. Nadourcan, GNP, Glenveagh (C054228), 18 July 2000 (Langton, 2002). L. Voriskey, The Rosses (B762176), 19 July 2000 (Langton, 2002)**: HA 39 -** L. Gartan, Church Hill, north shore (C065173), 18 July

2000 (Langton, 2002). L. Akibbon, Church Hill (C068184), 9 September 2009, EPA (DAM). L. Fern, Milford (C182247), 18 August 2011 (PHL). **DUBLIN: HA 9 -** Upper Reservoir, Bohernabreena (O095219), 16 April 1945, CFH (DAM). **FERMANAGH: HA 36 -** L. Atona, Cuilcagh Mountain (H110294) and L. Erne, Lower, Boa Island (H108626), 29 June 2000 (Langton, 2002); L. Erne, Lower, Black Bay (H072639), 27 April 2002 (PHL). L. Lattone, Kiltyclogher (H003456) and L. Macnean, Upper, Belcoo (H042403), 29 June 2000 (Langton, 2002). Toppedmountain L., Tempo, Enniskillen (H310453), 16 August 2011 (PHL). **GALWAY: HA 30 -** L. Anillaun, Maam Cross (L980470), 1 August 2007, EPA (DAM). L. Ballyquirke, Moycullen (M232317), 13 April 2007, EPA (DAM). L. Beaghcauneen, Ballinaboy (L679470), 5 April 2007, EPA (DAM). L. Bofin, Maam Cross (M034441), 7 June 2007, EPA (DAM). L. Corrib (M1545), 1980, BC (DAM). L. Maumwee, Maam Cross (L977485), 17 September 2007, EPA (DAM)**: HA 31 -** L. Illauntrasna, Glentrasna, Garomna (L888254), 12 September 2007, EPA (DAM). L. Loughanaure, Kilkieran (L828320), 12 September 2007, EPA (DAM). L. Nahasleam, Maam Cross (L972440), 1 August 2007, EPA (DAM)**: HA 32 -** L. Ballynakill, Cleggan (L639581), 11 September 2007, EPA (DAM). L. Fadda, Beaghcauneen (L668455), 11 September 2007, EPA (DAM). **KERRY: HA 21 -** L. Cloonaghlin, Waterville (V611708), 8 May 2008, EPA (DAM). L. Currane, Waterville (V535664), 9 May, 18 June and 22 July 2008, EPA (DAM). L. Inchiquin, Kenmare (V837629), 17 September 2008, EPA (DAM). R. Inny, Scarriff Bridge (V504696), 24 August 1983 (Hayes, 1991)**: HA 22 -** L. Acoose, Slievanore, Killorglin (V755854), 19 June 2008, EPA (DAM). L. Caragh, Killorglin (V719904), 15 July 2008, EPA (DAM). L. Cummernamuck, Killorglin (V745897), 20 June, 18 July and 9 September 2008, EPA (DAM). L. Guitane, Crohane, Killarney (W025846), 16 May 2005, EPA (DAM). L. Leane, Killarney, Brickeen (V937850), 3 July 1973 (Douglas and Murray, 1980). Muckross Lake, Killarney (V950853), 24 April, 16 July and 18 September 2008, EPA (DAM). R. Flesk, d/s Clydagh/Loo confluence (W084814), August and September 1978 (Ashe, 1982). **LEITRIM: HA 26 -** L. Boderg, Derrycarne, north west shore (N013915), 10 September 2008, EPA (DAM). L. Bofin, Dromod (N049894), 24 June 2008, EPA (DAM): **HA 35 -** L. Lackagh, Boleybrack (G920320), 3 August 2005, JRB (DAM). L. Nabrack, Crocknagapple (G860477), 4 August 2005, JRB/MC (DAM). L. Sandy, Crocknagapple (G891448), 4 August 2005, JRB/MC (DAM). **LIMERICK: HA 24 -** Bleach L., Pallaskenry (R441569), 28 July 2009, EPA (DAM). **LONGFORD: HA 26 -** L. Forbes, Cloonard, Newtownforbes (N084821), 27 August 2008, EPA (DAM). **MAYO: HA 26 -** L. Nanoge, Urlaur (M506903), 18 June 2008, EPA (DAM)**: HA 30 -** L. Aille, Aille, Westport (M071807), 24 June and 18 September 2008, EPA (DAM)**: HA 32 -** L. Doo, Delphi, west shore (L833680), 25 August 2008, EPA (DAM). L. Fin, Delphi (L841657), 12 July 2006, EPA (DAM). R. Owengarve, Rosgalliv Bridge, Mulranny (L886962), 4 August 2004, DAM/WM (Murray,

2005). L. Moher, Liscarney, Westport (L977766), 21 April and 24 June 2008, EPA (DAM)**: HA 33 -** L. Acorrymore, Achill Island (F578057), 5 August 2004, DAM/WM (DAM) also 7 April, 17 June and 17 September 2008, EPA (DAM). Bog pool, Sraheen, Achill Island (F716005), 6 May 2004, DAM/WM (DAM), L. Bunacurry, Achill Island (F695048) and pool/stream, at Camport, Achill Island (L677982), 29 September 2004, DAM/WM (DAM). L. Carrowmore, Bangor Erris, Knocknascollop (F830282), 17 September 2008, EPA (DAM)**: HA 34 -** Castlebar L., north shore, Castlebar (M106879), 7 May 2004, DAM/WM (DAM). L. Lannagh (Castlebar L.), west shore (M109883), 21 August 2008, EPA (DAM). L. Levally, Massbrook (G146043), 25 June and 23 September 2008, EPA (DAM). L. More, Ballynagoraher (G115044), 29 June 2006, EPA (DAM). L. Washpool, Ballycarra (M219842), 25 September 2008, EPA (DAM)**: Clare Island -** data (L6885), 1910, PHG (Grimshaw, 1912). **ROSCOMMON: HA 26 -** L. Cavetown, Boyle (M832974), 9 September 2008, EPA (DAM). L. Glinn, Loughglinn, Castlerea (M629870), 25 August and 9 September 2008, EPA (DAM). Grange L., Greywood, Strokestown (M938857), 8 April and 28 July 2008, EPA (DAM). **SLIGO: HA 26 -** L. Gara, Monastredan (M708996), 5 September 2008 and L. Gara, Cuppanagh, Cloonlough (G714013), 30 September 2008, EPA (DAM)**: HA 35 -** L. Arrow, Ballinafad (G789123), 29 April and 11 June 2008, EPA (DAM). L. Easky, Ox Mountain (G446230), 25 September 2008, EPA (DAM). **WESTMEATH: HA 36 -** L. Bane, Collinstown (N550712), 26 June 2006, EPA (EPA). **WICKLOW: HA 10 -** L. Bray Lower, Glencree (O141163), 4 June 1986 (DAM). Glencullen R., Knocksink (O218180), 25 March 1987, DEM/DAM (Morgan, 1989). Upper Glendalough Lake, Laragh, WMNP (T100960), 29 July 2009, EPA (DAM). R. Avonbeg, Drumgoft Bridge, Glenmalure (T105905) and R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991).

***Psectrocladius* (*Psectrocladius*) *schlienzi* Wülker, 1956**

DONEGAL: HA 38 - L. Barra, Commeen (B935119), 10 June 2009, EPA (Murray, 2012a). **WICKLOW: HA 10 -** Upper Glendalough Lake, Laragh, WMNP (T100960), 29 July 2009, EPA (Murray, 2012a)

***Psectrocladius* (*Psectrocladius*) *sordidellus* (Zetterstedt, 1838)**

ANTRIM: HA 3 - L. Neagh, Antrim Bay (J135866), 22 August 2001 and 17 May 2002 (PHL)**: HA 4 -** Carnfunnock Pond, Carnfunnock (D379069), 20 June 2000 (Langton, 2002)**: Rathlin Island -** long pool (D148521), 24 July 2000 (Langton, 2002). **CLARE: HA 25 -** L. Graney, Doorus, west shore (R556930), 3 August 2006, EPA (DAM). L. Derg, d/s Killaloe (M705715), 18 September 2009, EPA (DAM)**: HA 27 -** L. Bunny, Aughrim, south east shore (R377965), 2 May and 5 September 2006 (EPA) also 14 July 2009, EPA (DAM). L. Cullaun, Corrofin, mid

east shore (R317905), 4 July 2006 (EPA). L. Dromore, Ruan, Corrofin (R345858), 21 July and 21 September 2009, EPA (DAM). L. Inchicronan, east basin, Crusheen (R398866), 15 June 2009, EPA (DAM). L. Inchiquin, Corrofin, mid lake (R270895), 4 July and west shore (R266896), 15 July 2009, EPA (DAM). L. Muckanagh, Tubber, Corrofin, mid lake (R368926), 2 August and south east shore (R370922), 14 September 2009, EPA (DAM)**: HA 29 -** L. Skeardeen, Kilcorkan (R388991), 17 June 2009, EPA (DAM). **CORK: HA 19 -** L. Aderry, Castlemartyr (W935730), 24 September 1969, NH (Bracken and Murray, 1973). L. Allua, Ballingeary (W180652), 17 June 2008, EPA (DAM)**: HA 20 -** L. Curraghalicky, Drinagh, Dunmanway (W234046), 17 June 2008, EPA (DAM). L. Tooreen, Crookhaven (V790259), 10 April 2008, EPA (DAM)**: HA 21 -** L. Avaul, Glengarriff (V910553), 7 July 1969, NH (Bracken and Murray, 1973). L. Bofinna, Bantry (W041488), 11 September 2008, EPA (DAM). Glasslough (L. More), Glengarriff (V972544), 28 July 1968 (Murray, 1972). L. Reenydonegan, Bantry (W000515), 26 May 1969, NH (Bracken and Murray, 1973). **DERRY: HA 1 -** Upper Creggan Reservoir, Creggan, Derry (C417173), 23 March 2001 (PHL); Lower Creggan Reservoir, Derry (C422174), 23 March and 26 April 2001 (PHL). Pool, Creggan, Derry (C414171), 17 May 2002 (PHL)**: HA 3 -** Downhill Lake, Bishops Gate, Coleraine (C762361), 18 May 2000 (Langton, 2002) also 18 March 2006 (PHL). R. Bann, Coleraine (C854304), 31 May 1999 (PHL). **DONEGAL: HA 1 -** L. Finn, Fintown, Glenties (B911018), 9 June 2009, EPA (DAM)**: HA 36 -** L. Golagh, Ballyshannon (G965655), 8 June and 8 September 2009, EPA (DAM)**: HA 37 -** L. Shinvagh, Carricode (H005675), 27 March 2004 (PHL)**: HA 38 -** L. Barra, Commeen (B935119), 22 April 2009, EPA (DAM). L. Glen, Glen (C105292), 16 June 2009, EPA (DAM). L. Greenan, Loughsalt, Kilmacrennan (C117262), 16 June 2009, EPA (DAM)**: HA 39 -** L. Nambraddan, GNP, Glenveagh (C022193), 31 July 1985 (Heneghan, 1981; Murray, 2005). **FERMANAGH: HA 36 -** L. Erne, Lower, Brocagh Point, Boa Island (H108626), 17 August 2011 (PHL); L. Erne, Upper, Crom Castle, Newtownbutler (H357244), 27 June 2000 (Langton, 2002). L. Macnean, Lower, Belcoo (H085384), 29 June 2000 (Langton, 2002). L. Nolughage, Crom Castle, Newtownbutler (H364243), 27 June 2000 (Langton, 2002). Stream, Lisnaskea (H384306), 27 June 2000 (Langton, 2002). L. Keenaghan, Beleek (G974600), 28 March 2004 (PHL). **GALWAY: HA 25 -** L. Derg, Woodford (M794964), 24 May 2003 (PHL)**: HA 30 -** L. Corrib Lower, Moycullen (M271360), 18 September 2007, EPA (DAM). L. Lettercraffroe, Oughterard (M056376), 5 September 2007, EPA (DAM). L. Ross, Moycullen (M200363), 25 May 2003 (PHL)**: HA 31 -** L. Anaserd, Ballyconneely (L605443), 4 April 2007, EPA (DAM). L. Nahasleam, Maam Cross (L972440), 6 April 2006, EPA (DAM). **KERRY: HA 22 -** L. Guitane, Crohane, Killarney (W025846), 21 April, 8 July and 9 September 2008, EPA (DAM). L. Kilbrean, Killarney (W005935), 29 September 1969, NH (Bracken and Murray, 1973). Muckross Lake, Killarney, Dundag Bay (V964858), 1973

(Douglas and Murray, 1980). Upper Lake, Killarney (V909821), 9 September 2008, EPA (DAM)**: HA 23 -** L. Gill, Castlegregory (Q603139), 29 April 2008, EPA (DAM). **LEITRIM: HA 26 -** L. Bofin, Rinnafarna, Dromod (N036891), 29 July 2008, EPA (DAM). **LIMERICK: HA 24 -** Bleach L., Pallaskenry (R441569), 28 July 2009, EPA (DAM). L. Gur, Holycross (R646413), 13 June and 28 July 2009, EPA (DAM). **LONGFORD: HA 26 -** L. Forbes, Cloonard, Newtownforbes (N084821), 27 August 2008, EPA (DAM). **MAYO: HA 32 -** Roonagh L., Roonagh (L749759), 30 September 2004, DAM/WM (DAM). Mulranny (L840965), July 1911, PHG (Grimshaw, 1912). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). R. Owenwee, u/s Aghamore Bridge, Westport (L972817), 5 August 2004, DAM/WM (DAM). Belclare, Westport (L9682), 1910, JNH (Grimshaw, 1912). L. Moher, Liscarney, Westport (L977766), 21 April, 24 June and 18 September 2008, EPA (DAM). Lough near Westport (?L. Ballin) (L9987), July 1911, PHG (Grimshaw, 1912). Demesne, Westport (L9984), July 1911, PHG (Grimshaw, 1912). L. Clogher, Clogher, Westport, north shore (M032880), 30 September 2004, DAM/WM (DAM)**: HA 33 -** L. Acorrymore, Achill Island (F578057), 29 September 2004, DAM/WM (DAM) also 16 July and 17 September 2008, EPA (DAM). L. Cross, Drumreagh, Belmullet, west shore (F645293), 9 April and 14 August 2008, EPA (DAM). Glendarary, Achill Island (L7299), July 1911, JNH (Grimshaw, 1912). Bog pools, Glenamoy (F896345), April and August 1973, CD (Dowling, 1975; Dowling and Murray, 1981)**: HA 34 -** L. Alone, Ox Mountains (G367157), 22 April 2005, JRB (DAM). Castlebar L., Castlebar (M1087), July 1911, PHG (Grimshaw, 1912). L. Cullin, Drummon Wood (G229028), 15 April and 20 August 2008, EPA (DAM). L. Mallard, Castlebar (M121902), 30 September 2004, DAM/WM (DAM). L. Washpool, Ballycarra (M219842), 15 August and 25 September 2008, EPA (DAM)**: Clare Island -** stream, Fawnglass (L713854), 4 June 2002 (Murray and Murray, 2003). **OFFALY: HA 25 -** bog lake, Turraun (N150230), 22 December 1997 (DAM). **ROSCOMMON: HA 26 -** L. Glinn, Loughglinn, Castlerea (M629870), 9 September 2008, EPA (DAM). **SLIGO: HA 35 -** L. Easky, Ox Mountain (G446230), 25 September 2008, EPA (DAM). **WATERFORD: HA 17 -** L. Carrigavantry, Tramore (S548022), 21 April and 19 August 2009, EPA (DAM). **WESTMEATH: HA 26 -** L. Owel, Mullingar (N421566), July 1973, NH (Hayes, 1980). L. Coosan, Athlone (N055449), 24 April 2007, EPA (DAM)**: HA 36 -** L. Bane, Collinstown (N550712), 26 June 2006 (EPA). **WICKLOW: HA 10 -** L. Bray Lower, Glencree (O140163), 16 June 2009, EPA (DAM). R. Glenealo, Glendalough (T090962), 16 July 1996, EME/DAM (McEntee, 1997).

***Psectrocladius* (*Psectrocladius*) *ventricosus* Kieffer, 1925**

MAYO: HA 32 - Carrokeel Lake, Murrisk (L924830), 5 August 2004, DAM/WM (Murray,

2005; Murray and Murray, 2006)**: Clare Island -** coastal, Bayview Hotel (L717857), 20 August 2002 (Murray and Murray, 2003).

***Psectrocladius* Pe *sordidellus/ventricosus* (sensu Langton and Visser, 2003)**
MAYO: HA 33 - L. Keel, Keel, Achill Island: south east shore (F650051), 17 June 2008; mid lake (F651059), 16 July 2008 and south west shore (F641055), 17 September 2008, EPA (DAM).

***Psectrocladius* Pe sp. A (sensu Langton and Visser, 2003)**

[The characteristic pupal exuviae of this species has been recognised in Great Britain since 1980 (Langton, 1980, 1984) but the adult remains undescribed. Langton (2002) provided the first published record for Ireland (from Northern Ireland) from specimens he collected at Dungonnell in 2000. However, pupal exuviae were first collected in Ireland in 1982 from L. Dan, Co. Wicklow, HA 10 in lake shore samples collected by Libby Frey for Chydorid (Cladocera) inventory studies].
ANTRIM: HA 4 - Dungonnell Dam, Newtown Crommelin (D193170), 20 June 2000 (Langton, 2002). **CLARE: HA 28 -** L. Doo, Milltown Malbay (R123721) 1 April 2009 and north west shore, (R114722), 15 September 2009, EPA (DAM). L. Lickeen, Kilfenora, west shore, (R168909), 21 July 2009, EPA (DAM). L. Naminna, Boolteagh (R179708), 11 June 2009, EPA (DAM). **DONEGAL: HA 38 -** L. Nabuckan, Grogan More (B850184), 27 July 2005, JRB (DAM). L. Nasnahida, Doocharry, Dunglow (B852076), 7 April 2009, EPA (DAM). L. An tSeisigh, Portnablagh, Sheephaven (C043361), 16 June 2009, EPA (DAM). **GALWAY: HA 32 -** L. Kylemore, Letterfrack (L771582), 30 July 2007, EPA (DAM). **KERRY: HA 21 -** Erik L., Derrygarriff (V881777), 9 August 2005, JRB (DAM)**: HA 22 -** L. Guitane, Crohane, Killarney (W025846), 21 April, 8 July and 9 September 2008, EPA (DAM). Muckross Lake, Muckross, Killarney (V950853), 18 September 2008, EPA (DAM). **LEITRIM: HA 26 -** L. Natire (G966340), 3 August 2005, JRB/MC (DAM)**: HA 35 -** L. Lackagh, Boleybrack (G920320), 21 April and 3 August 2005, JRB (DAM). L. Nabrack, Crocknagapple (G860477), 29 April and 4 August 2005, JRB/MC (DAM). L. Sandy, Crocknagapple (G891448), 28 April 2005, JRB/MC (DAM). **MAYO: HA 33 -** L. Acorrymore, Achill Island (F578057), 29 September 2004, DAM/WM (DAM)**: HA 34 -** L. Alone, Ox Mountains (G367157), 5 August 2005, JRB/MC (DAM). **TIPPERARY: HA 18 -** Black L., Arra Mountains (R738771), 10 August 2005, JRB (DAM). L. Curra, Galtymore Mountain (R867242), 10 August 2005, JRB (DAM). **WICKLOW: HA 10 -** L. Ouler, Tonelagee (O091023), 19 May 2005, JRB (Murray, 2005). L. Dan, Oldbridge (O157024), 30 September 1982, L. Frey (DAM). Upper Glendalough Lake, Laragh, WMNP (T100960), 29 July 2009, EPA (DAM).

***Pseudorthocladius* (*Pseudorthocladius*) *curtistylus* (Goetghebuer, 1921)**
ANTRIM: Rathlin Island - pool (2) east of lighthouse (D164520), 24 July 2000 (Langton, 2002). **CORK: HA 21 -** Ballaghabeama Gap, R. Keelduff Catchment (V759780), 28 July 1968, DAM (Murray and Ashe, 1983). **KERRY**: **HA 22 -** L. Leane, Killarney, Muckross Boathouse (V965866), 6 September 1987, NOM (LJH). **LOUTH: HA 6 -** Tinure Marsh, Collon (O020835), 27 May 1985, BH (Murray, 2005). **MAYO: Clare Island -** L. Poirtin Fuinch (L706857), 13 July and 20 August 1999 (Fahy, 2002/NMI).

***Pseudorthocladius* (*Pseudorthocladius*) *filiformis* (Kieffer, 1908)**
ANTRIM: Rathlin Island - pool (3) east of lighthouse (D156516), 7 July 2004 (PHL). **DONEGAL: HA 37 -** L. Shinvagh, Carricode (H005675), 27 April 2002 (PHL)**: HA 38 -** L. Nabuckan, Grogan More (B850184), 10 May 2005, JRB (DAM). R. Owenveagh, upper (Ballaghnageeha), Glenveagh (B970160), 29 July 1985, LJH (Heneghan, 1986). L. Nadourcan, Glenveagh (C054228), 23 July 1985, LJH (Heneghan, 1986). L. Keel, Kilmacrennan (C158243), 16 July 2009, EPA (DAM). **DUBLIN: HA 9 -** bog pool, Featherbed (O120190), March and July 1974, CD (Dowling, 1975; Dowling and Murray, 1981). **GALWAY: HA 30 -** L. Corrib (M1545), 1980, BC (DAM)**: HA 31 -** L. Shindilla, Derreennacreeva (L958460), 16 May 2006, EPA (DAM)**: HA 32 -** R. Polladirk, Letterfrack (L741565), 19 September 1986 (Heneghan, 1987). L. Ballynakill, Cleggan (L639581), 11 July 2007, EPA (DAM). L. Enask, Beaghcauneen (L662468), 17 July 2007, EPA (DAM). **KERRY: HA 22 -** Muckross Lake, Dundag Bay (V964858), 1973 (Douglas and Murray, 1980). **LEITRIM: HA 35 -** L. Sandy, Crocknagapple (G891448), 28 April 2005, JRB/MC (DAM). **MAYO: HA 32 -** L. Glencullin, Delphi, north west shore (L815699), 26 June 2008, EPA (DAM). R. Carrowinsky, Glenkeen (L834720), 9 May 2003, DAM/WM (DAM)**: HA 33 -** bog pools, Glenamoy (F896345), May to August 1973, CD (Dowling, 1975; Dowling and Murray, 1981)**: Clare Island -** [All following Clare Island records are from Murray and Murray (2003)] artificial tank, east of road to lighthouse (L698875), 20 August 2002. Bog pool west of road, Maum (L709863), 5 June 2002. Stream, Fawnglass (L713854), 4 June 2002. Roadside, Abbey to Knocknaveen (L689847), 5 June 2002. Creggan L., Lecarrow, (L689857), 21 August 2002. Bog pool, east slope of Knockmore (L683857), 21 August 2002. **WICKLOW: HA 10 -** L. Ouler, Tonelagee (O091023), 19 May 2005, JRB (DAM). Upper Glendalough Lake, Laragh, WMNP (T100960), 29 July 2009, EPA (DAM).

***Pseudorthocladius* (*Pseudorthocladius*) *macrovirgatus* Sæther and Sublette, 1983**
DERRY: HA 3 - R. Bann, Coleraine (C854304), 24 August 2012 (PHL). **DONEGAL: HA 38 -** L. Nadourcan, Glenveagh (C054228), 23 July 1985 and R. Owenveagh, vegetation sweep

(B990178), 27 July 1985 (Heneghan, 1986; Heneghan and Murray, 1987 - sub *P. cranstoni* Sæther and Sublette 1983) [Note: recent examination (DAM) of Heneghan slide material has shown that the grid reference number and date of collection for the specimen collected adjacent to R. Owenveagh were cited erroneously in Heneghan and Murray (1987)]. **DUBLIN: HA 9 -** bog pool, Featherbed (O120190), 1 April 1974, CD (DAM). **GALWAY: HA 32** - R. Polladirk, CNP, Letterfrack (L741570), 19 September 1986 (Heneghan, 1987; Heneghan and Murray, 1987 - sub *P. cranstoni*; Murray, 2005). **KERRY: HA 22 -** L. Nakirka, Caragh Catchment (V735896), 3 September 1979, PC (Sæther and Sublette, 1983 - sub *P. cranstoni*). **LEITRIM: HA 35 -** L. Nabrack, Crocknagapple (G860477), 4 August 2005, JRB/MC (DAM). **MAYO: Clare Island -** roadside between Maum and Capnagower (L712857), 20 August 2002 and north side of Knockmore (L664864), 21 August 2002 (Murray and Murray, 2003).

***Pseudorthocladius* (*Pseudorthocladius*) *rectangilobus* Caspers and Siebert, 1980**
DONEGAL: HA 38 - Glenlack Stream, near L. Veagh, GNP, Glenveagh (C003183), 15 May 1986 (Heneghan, 1986 - sub *P.* sp. ?*rectangularis* –mis-spelling; Murray, 1996). L. Veagh, boathouse near Castle, Glenveagh (C022211), 23 May 1986 (Heneghan, 1986; Murray, 2005). R. Calabber, tributary of R. Owencarrow, Glenveagh (C035241), 28 May 1986 (Heneghan, 1986; Murray, 1996). **FERMANAGH: HA 36 -** L. Erne, Lower, Black Bay (H072639), 27 April 2002 (PHL).

***Pseudosmittia albipennis* (Goetghebuer, 1921)**
ANTRIM: HA 4 - Murlogh Bay, Fair Head (D198420), 23 May 2004 (PHL). **DONEGAL: HA 38 -** waterfall, west of L. Veagh, Glenveagh (B995189), 21 August 1985, LJH (Heneghan, 1986 - as "*Orthosmittia* sp.?" (DAM)). **GALWAY: HA 31 -** L. Ardderry, Maam Cross (L982458), 25 May 2003 (PHL). **KERRY: HA 22 -** Killarney (V9589), 1928, FWE (Edwards, 1929 - sub *Smittia curticosta* Edwards).

***Pseudosmittia angusta* (Edwards, 1929)**
TIPPERARY: HA 18 - L. Curra, Galtymore Mountain (R867242), 10 August 2005, JRB (Murray, 2005; Murray and Baars, 2006).

***Pseudosmittia obtusa* Strenzke, 1960**
ANTRIM: Rathlin Island - pool east of lighthouse (D163521), 7 July 2004 (Langton, 2005) [not yet recorded from the Irish mainland].

***Pseudosmittia trilobata* (Edwards, 1929)**
MAYO: HA 33 - bog pools, Glenamoy (F896345), June 1973, CD (Dowling and Murray, 1981; Murray, 2005)**: Clare Island -** seepage, south of lighthouse, Clare Island (L695879), 20 August 2002 (Murray and Murray, 2003).

***Rheocricotopus* (*Psilocricotopus*) *atripes* (Kieffer, 1913)**
DERRY: HA 1 - inflow to Upper Creggan Reservoir, Derry (C413171), 26 April and 10 May 2001 (Langton, 2004). **KERRY: HA 21 -** L. Brin, Derreeny (V780775), 10 September 2008, EPA (DAM)**: HA 23 -** R. Owenmore, 3km u/s Boherboy (Q496083), 2 May 1999, CB (PJA/NMI). **LEITRIM: HA 35 -** L. Nabrack, Crocknagapple (G860477), 29 April 2005, JRB (DAM). **MEATH: HA 7 -** R. Boyne, Stackallen Bridge (N917713), 12 July 1981 (Hayes, 1991).

[Langton (2004) provided the first published record for Ireland from Ceggan Reservoir. Earlier unpublished records were known from from HA 7 and HA 23 since 1981].

***Rheocricotopus* (*Psilocricotopus*) *chalybeatus* subsp. *chalybeatus* (Edwards, 1929)**
ANTRIM: HA 3 - R. Kells, Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002) and Killylane Reservoir, Magherabane, Larne (J292985), 20 June 2000 (PHL). **CLARE: HA 28 -** R. Creegh, Mountrivers Bridge, Doonbeg (Q991659), 30 July 1982 (Hayes, 1991). **CORK: HA 20 -** R. Bandon: Long Bridge, Dunmanway (W242631), Bealabouy Bridge, Dunmanway (W257514), u/s Ballineen (W331537) and Ballineen Bridge (W434538), 27 May, 30 June, 25 August and 25 September 1980; Castle Bernard (u/s Bandon) (W472546), 30 June, 25 August and 25 September 1980 and 2.5km d/s Bandon (W516569), 18 April, 27 May, 30 June, 25 August, 25 September, 31 October and 28 November 1980 (all Morgan, 1982). R. Ilen, Drimoleague (W098454), Madore (W103419) and Hollybrook (W117363) also R. Ovane, Pierson's Bridge (W023454), 24 August 1983 (Hayes, 1991). **DERRY: HA 2 -** R. Roe, Largy Bridge, Limavaddy (C681202), 14 July 2000 (Langton, 2002). R. Curly, Artikelly Bridge, Limavady (C684247), 9 June 2000 (Langton, 2002)**: HA 3 -** Downhill Lake, Downhill Forest, Coleraine (C757354) and Downhill Forest stream, Coleraine (C759348), 24 March 2002 (PHL). R. Bann, Coleraine (C854304), 5 May, 4 July and 26 August 1999, 3 May, 13 and 24 June, 3 July 2000 (PHL), 27 July and 10 August 2012 (PHL). **DONEGAL: HA 37 -** R. Eanymore, Letterbara Bridge (G883825) and Drumagraa Bridge (G863822), 10 August 1982 (Hayes, 1991). R. Oily, Claggen (G751803), 8 August 1982 (Hayes, 1991). R. Stragar, Duninkeely (G727792), 10 August 1982 (Hayes, 1991)**: HA 38 -** R. Tullaghobeg, Falcarragh (B925319) and Millmount (B933304), 12 August 1982 (Hayes, 1991). Stream near Administration Centre, GNP, Glenveagh (C041227), 14 May 1986 (Heneghan, 1986)**: HA 39 -** R. Leannan,

Drumaboden (C165218), 12 August 1982 and Claragh (C197210), 13 August 1982. R. Crana, Buncrana (C347328) and Ballymagan (C379344), 15 August 1982 (all Hayes, 1991). **GALWAY: HA 30 -** R. Owenriff, Oughterard (M112426), 25 May 2003 (PHL). **KERRY: HA 21 -** R. Inny, Scarriff Bridge (V504696) and u/s Waterville (V525704), 24 August 1983 (Hayes, 1991)**: HA 22 -** R. Clydagh, u/s Clydagh Bridge (W114826), May to September 1978 (Ashe, 1982). R. Flesk: White Bridge (V987904), 1973 (Douglas and Murray, 1980) and d/s Whitebridge (V987900), 27 July 1974 (Murray, 2005). R. Flesk, d/s Clydagh/Loo confluence (W084814), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), May to September 1978 (Ashe, 1982). **KILKENNY: HA 15 -** R. Nore, Ballyragget (S445707), Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Athanagh (S423763), 28 August 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Bunowen, Louisburg, u/s bridge (L807807), 5 August 2004, DAM/WM (DAM). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972)**: HA 33 -** R. Ballinglen, Ballycastle (G103383), 19 August 1983 (Hayes, 1991)**: HA 34 -** R. Moy, Bellanacurra (G403047), 29 August 1982 and Cloongullaun (G348016), 30 August 1982 (Hayes, 1991)**: Clare Island -** Pollabrandy stream, Knocknaveen (L704858), 4 June 2002 (Murray and Murray, 2003). **MEATH: HA 7 -** R. Kinnegad, Kinnegad (N601448), June 1989 (Murray and Lynch, 1991). R. Boyne: Newtown, Trim (N815571), 9 July 1981 (Hayes, 1991); Bellinter Bridge (N894625), 7 July 1968 (Murray, 1972), 21 August 1988 (Murray, 1988), 11 and 31 August 1999, DAM/WM (DAM); New Bridge, Navan (N873679), 18 August 1988 (Murray 1988); Stackallen Bridge (N918713), 12 July 1981 (Hayes, 1991) and 19 July 1989 (DAM); Slane Bridge (N965737) and Knowth Weir (N995720), 19 July 1989 (DAM). R. Blackwater, Poolboy Bridge, Navan (N871681), 18 August 1988 (Murray, 1988). **OFFALY: HA 25 -** R. Little Brosna, New Bridge (N016088) and R. Brosna, Cloghan (M046209), 2 September 1982 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627), 16 July 1981 and Ballyforan (M817464), 16 July 1981 also Athleague (M825758), 14 August 1981 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Metal Bridge, Tobercurry (G464138), 30 August 1982 (Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430) and R. Easky, Easky (G377378), 19 August 1983 (Hayes, 1991). **WATERFORD: HA 18 -** R. Blackwater, Lismore (X047988), 31 August 1981 (Hayes, 1991). **WEXFORD: HA 12 -** R. Slaney, Clomahon (S933534), Ballycarney (S967488) and Edernline Bridge (S977345), 29 July 1981 (Hayes, 1991). **WICKLOW: HA 10 -** R. Avonbeg, Meetings Bridge (T188831), 11 July and 27 October 1997 (Curran, 2001). R. Avonmore: Castlehoward (T190833), 4 August 1983 (Hayes, 1991). Lion Arch Bridge (T194833), 11 July and 27 October 1997 (Curran, 2001). R. Avoca: Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991), 11 July and 27 October 1997 (Curran, 2001); Avoca Village (T203802), 11 July 1997 (Curran, 2001; Curran and Murray,

2001) and 27 October 1997 (Curran, 2001)**: HA 12 -** R. Derry, Bridgeland (T021744), 29 July 1981 (Hayes, 1991). R. Slaney, Knockgarrigan, Glen of Imail (S936937), 28 July 1981 (Hayes, 1991).

***Rheocricotopus* (*Psilocricotopus*) *glabricollis* (Meigen, 1830)**
CORK: HA 20 - R. Bandon, u/s Ballineen (W331537), 18 April 1980 and 2.5km d/s Bandon (W516569), 28 November 1980 (Morgan, 1982). **KERRY***:* **HA 22 -** R. Loo, Aughnanus Bridge, Crohane (W045790), July 1978 (Ashe, 1982; Murray and Ashe, 1983 - sub *R. gouini*).

***Rheocricotopus* (*Psilocricotopus*) *tirolus* Lehmann, 1969**
KERRY: HA 21 - L. Brin, Derreeny (V780775), 18 June and 10 September 2008, EPA (Murray, 2010).

***Rheocricotopus* (*Rheocricotopus*) *effusus* (Walker, 1856)**
ANTRIM: HA 4 - R. Glenaan, Cushendall (D218288), 17 September 2011 (PHL). **ARMAGH: HA 3 -** Upper R. Bann tributary, Cappagh (J156425), 25 May 1997 (PHL). **CORK: HA 19 -** Carrigdroihid Reservoir, Ashton (W360703), 3 April 2008, EPA (DAM)**: HA 20 -** R. Bandon, Castle Bernard, u/s Bandon (W472546), 28 November 1980 (Morgan, 1982). **DERRY: HA 1 -** Upper Creggan Reservoir, Derry (C417173), 17 May 2002 (PHL)**: HA 2 -** R. Bessbrook, Limavady (C655212), 9 June 2000; fire dam 1, Binevenagh Forest, Coleraine (C699304), 18 May 2000 and burn at Largantea picnic area, Formoyle, Coleraine (C738287), 9 June 2000 (all Langton, 2002)**: HA 3 -** Downhill Lake, Downhill Forest, Coleraine (C757354) and Downhill Forest stream, Coleraine (C759348), 17 March 1999 (PHL). Garvagh House, Garvagh (C837154), 21 July 2002 (PHL). Pond, near R. Macquosin, Ballytinagh Road, Coleraine (C854255), 18 April 2004 (PHL). R. Bann, Coleraine (C854304), 12 April, 30 and 31 May 1999, 1 January, 19 February and 3 May2000 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 7 May 2001 (PHL). L. Fea, Draperstown (H760868), 15 May 2002 (PHL). **FERMANAGH: HA 36 -** L. Erne Lower, Black Bay (H072639), 27 April 2002 (PHL). **LEITRIM: HA 35 -** L. Glencar, Glencar (G757435), 2 September 2008, EPA (DAM). **MEATH: HA 7 -** R. Boyne, New Bridge, Navan (N873679), 18 August 1988 (Murray, 1988)**: HA 8 -** R. Nanny, road bridge u/s Duleek (O035655), 6 June 2006, DAM/WM (DAM). **ROSCOMMON: HA 26 -** L. Funshinagh, Brideswell (M933513), 23 April 2007, EPA (DAM). **TIPPERARY: HA 16 -** R. Drish, Boolabeha Bridge (S190619), 22 May 1992 and R. Suir, Rossestown Bridge (S134624), 6 July 1992 (Murray and Lynch, 1992). **TYRONE: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WICKLOW: HA 10 -** Glencullen R., Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989).

[Langton (2002) provided the first published record for Ireland from collections in HA 2 during the year 2000. Earlier unpublished records were known from HA 10 (1987), HA 16 (1992) and HA 20 (1980)].

***Rheocricotopus* (*Rheocricotopus*) *fuscipes* (Kieffer, 1909)**

ANTRIM: HA 3 - Glenravel Water, Gartnageeragh, Newtown Crommelin (D147154), 2 July 2000 (Langton, 2002). L. Neagh, Antrim Bay (J135866), 17 and 28 March 2001(PHL). R. Kells, Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002). R. Sixmilewater, Templepatrick (J227867), Killylane Reservoir, Magherabane, Larne (J292985) and Glen Burn, Lower Glen Bridge (J263994), 4 May 1999 (PHL)**: HA 4 -** R. Bush: Conogher Bridge (C963305) and Ballyhoe Bridge (D077294), 10 September 2000 (Langton, 2002). R. Brymore, Brymore Bridge (D162275), R. Glendun, Drumfresky, Cushendun (D193308) and R. Glenariff (Inver/Glenariff), Cushendall (D215205), 2 July 2000 (Langton, 2002). R. Glenaan, Cushendall (D218288) and R. Glenarm, Glenarm (D310148), 17 September 2011 (PHL)**: HA 5 -** Three-Mile-Water, Mossley (J380892), 4 May 1999 (PHL). Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **CLARE: HA 25 -** L. Graney, Doorus, west shore (R556930), 10 April, 4 May and 6 July 2006, EPA (DAM). L. Derg, d/s Killaloe (M705715), 21 April 2009, EPA (DAM). L. Alewnaghta, Whitegate, west shore, (R758908), 17 June 2009, EPA (DAM). **CORK: HA 19 -** Carrigdroihid Reservoir, Ashton (W360703), 3 April 2008, EPA (DAM)**: HA 20 -** L. Ballin, Leap (W199389) and L. Curraghalicky, Drinagh, Dunmanway (W234046), 9 April 2008, EPA (DAM). R. Bandon, Long Bridge, Dunmanway (W242631), 20 February, 18 April, 31 October, 28 November, 22 December 1980 and 17 January 1981; Bealabouy Bridge, Dunmanway (W257514), 20 February, 20 March, 27 May, 25 September, 31 October and 28 November 1980; u/s Ballineen (W331537), 20 March, 18 April, 27 May and 31 October 1980; Ballineen Bridge (W434538), 20 March, 18 April, 27 May, 31 October and 28 November 1980; Castle Bernard (u/s Bandon) (W472546), 18 April, 25 August, 25 September, 31 October and 28 November 1980; 2.5km d/s Bandon (W516569), 20 February, 20 March and 18 April 1980, 27 May, 25 September, 31 October and 22 December 1980 (Morgan, 1982). **DERRY: HA 1 -** Upper Creggan Reservoir, Derry (C417173), 23 March and 10 May 2001 (PHL). Pool near Creggan Reservoir, Derry (C414171), 10 May 2001 (PHL). Inflow to Upper Creggan Reservoir, Derry (C413171), 23 March, 26 April, 10 and 18 May 2001 also 17 May 2002, (PHL)**: HA 2** [All following HA 2 records are by Langton (2002)] - R. Ballykelly, Clagan (C628209) and R. Ballykelly, Ballykelly (C623211), 9 June 2000. R. Owenbeg, Feeny picnic area, Feeny (C645058), 26 June 2000. R. Bessbrook, Limavady (C655212) and Roe Valley Park pool, Limavady (C679201), 9 June 2000. R. Roe, Largy Bridge, Limavaddy (C681202), 14 July 2000. R. Curly, Artikelly Bridge, Limavady (C684247), 9 June 2000. Fire dam 1, Binevenagh Forest,

Coleraine (C699304), 18 May 2000. R. Castle, Ardmore Bridge, Limavady (C706207), 9 June 2000 and burn at Largantea picnic area, Formoyle, Coleraine (C738287), 9 June 2000**: HA 3 -** Downhill Beach stream, Coleraine (C754326), 9 June 2000 (Langton, 2002). Howell's Tarn, Ballywildrick, Coleraine (C766325), 7 and 21 April 2002 (PHL). Downhill Lake, Downhill Forest, Coleraine (C757354), 24 March 2002 (PHL). Downhill Forest stream, Coleraine (C759348), 15 March 1999, 21 August 2001 and 24 March 2002 (PHL). R. Agivey, Garvagh (C838154) and ford at Ballynameen (C827148), 30 May 2002 (PHL); R. Agivey, Glascort Bridge (C907226), 16 July 2000 (Langton, 2002). R. Moyola, New Bridge, Magherafelt (H955905), 7 May 2001 (PHL). R. Aghadowey, Ballybritain Bridge (C859212) and R. Macosquin, Black Bridge, Ballylintagh (C854256), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 20 May, 10 and 18 June 1999; 1, 6, 17, 18 and 27 January, 19 and 28 February, 10 March, 6 April, 3, 17, 25 and 31 May, 7 and 24 June, 3 July and 8 October 2000, 6 and 18 February, 26 April and 16 June 2001, 23 January 2005, 11, 18 and 25 April, 2 May 2010 (all PHL). **DONEGAL: HA 1 -** R. Deele, Legland, Raphoe (C136028), 19 July 2000 (Langton, 2002)**: HA 39 -** L. Akibbon, Church Hill (C068184), 23 April and 11 June 2009, EPA (DAM). R. Glashagh, Drumbologe, Letterkenny (C096153), 18 July 2000 (Langton, 2002). Stream, Ranny House (Kerrykeel, "burn"), Carrokeel (C208322), 2 June 2000 (Langton, 2002). **DOWN: HA 3 -** Upper Bann tributary, Hilltown (at Church) (J210294), 27 March 1998 (PHL). R. Leitrim, Leitrim Bridge, Hilltown (J217285), 27 March 1998 (PHL). Eel Burn, Shanrod House, Shanrod (J223477), 26 March 1998 (PHL). Upper R. Bann, Hilltown Ford, Hilltown (J222289), 27 March 1998 (PHL). R. Carcullion, Hilltown (J213275), 26 September 1997 (PHL). R. Rocky (d/s R. Shanky confluence), Hilltown (J233277), 26 September 1997 (PHL). Glenaveagh stream, Glenaveagh Bridge (J255284), 29 May 1998 (PHL). **DUBLIN: HA 9 -** R. Dodder, Fort Bridge, Bohernabreena (O009242), 2 April 1946 (Fitzgerald, 1947); Milltown (O168303), 2 February 1949 (Reilly, 1951). **FERMANAGH: HA 36 -** R. Belbarrinagh, Belcoo (H112309), 29 June 2000 (Langton, 2002). R. Finn, Lisnanesnagh Bridge (H544337), 26 June 2000 (Langton, 2002). R. Hollybrook, Lisnaskea (H373310), 27 June 2000 (Langton, 2002). R. Sruh Croppa, Cuilcagh Mountains (H111329), 29 June 2000 (Langton, 2002). R. Colebrook tributary, Drumcleave, Brookeborough (H367427), 24 June 1997 (PHL); R. Colebrook, Tattenbuddagh Bridge, Brookeborough (H458428), 4 June 1997 (PHL). **GALWAY: HA 25 -** R. Woodford, bridge on R351, Woodford (M732000), 24 May 2003 (PHL)**: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 (Hayes, 1991)**: HA 30 -** pool at N59 picnic site, Moycullen (M204336), 25 May 2003(PHL); stream at N59 picnic site, Moycullen (M204326), 25 May 2003 (PHL). **KERRY: HA 22 -** L. Caragh, Killorglan (V719904), 20 June 2008, EPA (DAM). R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Clydagh, Knocknagowan (W187837), April to November 1978 and January to March 1979 (Ashe, 1982).

R. Flesk: d/s Whitebridge (V987900) 11 April 1977 (Murray and Ashe, 1983), d/s Clydagh/Loo confluence (W084814), Flesk Bridge (W034876), d/s Whitebridge (V987900) also R. Loo, Aughnanus Bridge, Crohane (W045790), April to November 1978, January-March 1979 (Ashe, 1982). **KILDARE: HA 9 -** R. Liffey, Straffan Bridge (N924293), 1929, WEF (Humphries and Frost, 1937). **LAOIS: HA 15 -** R. Tonet, Monnagh, Coolrain (S265927), 29 April 1999, CB (PJA/NMI). **LEITRIM: HA 26 -** L. Allen, Mountallen, Drumshanbo (G950145), 28 April 2008, EPA (DAM). L. Rinn, Mohill (N095943), 10 April 2008, EPA (DAM). **LOUTH: HA 6 -** L. Mentrim, Ardee (N913879), 27 June 2005, DAM/WM (DAM). **MAYO: HA 32 -** L. Knappabeg, Westport (M010803), 21 April 2008, EPA (DAM). **MEATH: HA 7 -** Yellow R., tributary to R. Blackwater, Randalstown, Navan (N835710), 29 August 1995 (Finnegan, 1998)**: HA 8 -** stream-pond, Meadesbrook, Kilmoon (O038594), 31 May 1974, 22 April 1982, 10 November and 12 December 2012 (DAM). **MONAGHAN: HA 36 -** L. Drumlona, Rockcorry (H636176), 4 April 2007, EPA (DAM). L. Summerhill, Clones (H490279), 26 April 2007, EPA (DAM). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627), 16 July 1981 (Hayes, 1991). **TIPPERARY: HA 15 -** R. Nore, Clonakenny (S116805), 27 August 1981 (Hayes, 1991)**: HA 25 -** R. Kilmastulla, Kilmastulla Bridge (R728698), 3 September 1981 (Hayes, 1991). **TYRONE: HA 1 -** Dennet Stream, Essbeg Bridge, Lisnaskee (H384306), 27 June 2000 (Langton, 2002). Pool, by R. Glenelly, Upper Barnes (H553904) and R. Glenelly, Crannagh Bridge, Crannagh (H594926), 17 August 2011 (PHL)**: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WEXFORD: HA 12 -** Movilla stream, Screen (T082311), 6 May 2006, DAM/WM (DAM). R. Sow tributary, Garylough Mill, Screen (T076302), 6 May 2006, DAM/WM (DAM). **WICKLOW: HA 9 -** R. Liffey, Ballysmuttan Bridge (O157148), 1929, WEF (Humphries and Frost, 1937)**: HA 10 -** Glencullen R., Knocksink (O218180), 25 March and 18 May 1987, DEM/DAM (Morgan, 1989)**: HA 12 -** R. Derry, Balisland (S978645), R. Slaney, Stratford Bridge (S895930) and R. Slaney, Kilmurray (S889856), 28 July 1981 (Hayes, 1991).

***Rheosmittia spinicornis* (Brundin, 1956)**

LAOIS: HA 15 - R. Nore: Castletown Bridge (S326930), Kilbricken (S362898), Shanahoe Bridge (S407858) and u/s Durrow (S416787), 27 August 1981 (Hayes, 1991). **MAYO: HA 34 -** R. Moy, Bellanacurra (G403047), 29 August 1982 (Hayes, 1991). **WICKLOW: HA 12 -** R. Slaney, Knockgarrigan, Glen of Imail (S936937) and Stratford Bridge (S895930), 28 July 1981 (Hayes, 1991; Murray and Ashe, 1983).

***Smittia amoena* Caspers, 1988**

DERRY: HA 3 - R. Bann, Coleraine (C854304), 17 August 2012 (Langton, 2012).

S. amoena has been cited in the Fauna Europaea database (Sæther and Spies, 2005, 2011) as "present" - in Ireland (IE) but absent in Northern Ireland (GB-NI). The source of information for that citation is unknown (M. Spies, pers comm.). The recent record in August 2012 by Langton from Northern Ireland is the only confirmed occurrence of the species from the island of Ireland.

***Smittia aterrima* (Meigen, 1818)**

CORK: HA 19 - L. Gouganebarra, Inchegeelagh (W009060), 27 July 1968 (Murray, 1972). **DERRY: HA 3** – R. Bann, Coleraine (C854304), November 2013 (PHL). **MAYO: HA 33 -** bog pools, Glenamoy (F896345), September 1973, CD (Dowling and Murray, 1981). **MEATH: HA 7 -** R. Boyne, Bellinter Bridge (N894625), 31 March 1968 (Murray, 1972). St Bridget's Well, Ardsallagh, Navan (N897635), 14 November 1976 (DAM) and around a marsh, Ardsallagh, garden (N893639), 15 November 1976 (DAM)**: HA 8 -** stream-pond, Meadesbrook, Kilmoon (O038594), 11 February 1996 (Murray, 2005) and 8 April 2000, 1 January 2001, 24 May and 9 June 2006 (DAM); lawn, Meadesbrook, Kilmoon (O040594), 8 April 2000 (DAM). **WESTMEATH: HA 25 -** L. Ennell, Tudenham (N415466), 2 May 1966 (Murray, 1972).

***Smittia contingens* (Walker, 1856)**

DERRY: HA 3 - R. Bann, Coleraine (C854304), 26 October 2012 (PHL). **DUBLIN: HA 9 -** bog pool, Featherbed (O120190), April 1974 (Dowling, 1975; Dowling and Murray, 1981). **KERRY: HA 22 -** R. Caragh, Upper Brida Valley (V785810), Lower Brida Valley (V740805) and Blackstones Bridge, d/s R. Acoose confluence (V710864), 1975, CD (Dowling *et al.*, 1981). L. Reagh, Black Valley, near Cummeenduff R. outflow, Gearhameen (V820808), March 1973, DJA (Murray and Douglas, 1980 - sub *Smittia aquatilis*). **MAYO: HA 33 -** bog pools, Glenamoy (F896345), 1973 (Dowling, 1957; Dowling and Murray, 1981).

***Smittia edwardsi* Goetghebuer, 1932**

DERRY: HA 3 - Downhill Lake, Downhill Forest, Coleraine (C757354), 24 March 2002 (PHL). Bishops Gate Garden, Coleraine (C762355), 18 March 2006 (PHL). Garvagh House, Wood, Garvagh (C837154), 21 July 2002 (PHL). **DONEGAL: HA 38 -** L. Voriskey, The Rosses (B762176), 19 July 2000 (PHL). **DUBLIN: HA 9 -** bog pool, Featherbed (O120190), April and May 1974 (Dowling, 1975; Dowling and Murray, 1981). **MAYO: HA 33 -** bog pools, Glenamoy (F896345), August 1973 (Dowling, 1975; Dowling and Murray, 1981). **MEATH: HA 8 -** R. Delvin, Gormanstown (O180661), 3 April 1968 (Murray, 1972).

***Smittia leucopogon* (Meigen, 1804)**
ANTRIM: HA 3 - Templewell Pond, Templepatrick (J232856), 26 July 2008 (PHL). **MEATH: HA 7 -** ditch, Ardsallagh, Navan (N894636), 2 May 1982 (Murray and Ashe, 1983; Murray, 2005).

***Smittia nudipennis* (Goetghebuer, 1913)**
WICKLOW: HA 10 - R. Glendasan, Laragh, WMNP (T100982), 24 June 1996 (Murray, 2010; Murray, 2005).

***Smittia pratorum* (Goetghebuer, 1927)**
ANTRIM: HA 4 - Murlogh Bay, Fair Head (D198420), 7 July 2002 (PHL). **CAVAN: HA 7 -** L. Cuilcagh, Virginia (N636895), 5 April 1968 (Murray, 1972). R. Barora tributary, Relaghbeg (N679907), 29 March 1968 (Murray, 1972). **DERRY: HA 2 -** Umbra Nature Reserve, Umbra (C725358), 2 June 2002 (PHL). Ball's Point, Limavady (C645305), 8 August 2002 (PHL)**: HA 3 -** pond, near R. Macquosin, Ballytinagh Road, Coleraine (C854255), 16 May 2004 (PHL). Coleraine (C858304), 15 November 2003 and 27 July 2007 (PHL). L. Neagh (H9080), no data (McLarnon and Carter, 2000). **GALWAY: HA 26 -** R. Castlegar, Mountbellew Bridge (M674477), 31 August 1981 (Hayes, 1991; Murray, 2005). **KERRY: HA 22 -** L. Reagh, Black Valley near R. Cummeenduff, Gearhameen (V820808), March 1973 (Douglas and Murray, 1980). **MAYO: Clare Island -** roadside at Bayview Hotel (L716856), 28 April 2000, R. Doree, Lecarrow (L698867), 5 June 2002 and Loughnapucar stream (L658848), 21 August 2002 (Murray and Murray, 2003). **MEATH: HA 7 -** R. Boyne, Ardsallagh (N894640), 18 May 1986 (DAM)**: HA 8 -** lawn, Meadesbrook, Kilmoon (O040594), 1 February 1997 (DAM) and stream-pond, Meadesbrook, Kilmoon (O038594), 15 November 2005 (DAM).

***Smittia superata* Goetghebuer, 1939**
DERRY: HA 3 - McFadyen's Garden, Coleraine (C848316), 13 April 2003 (Langton, 2004).

***Synorthocladius semivirens* (Kieffer, 1909)**
ANTRIM: HA 3 - R. Clogh, Clough Mills (D105109), 2 July 2000 (Langton, 2002). L. Neagh, Antrim Bay (J135866), 17 March 2000 (Langton, 2002) and 28 March 2001 (PHL); L. Neagh, Churchtown Point (J056852), 13 October 2000 (Langton, 2002). R. Kells, Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002). Templewell Pond, Templepatrick (J232856), 26 July 2008 (PHL)**: HA 4 -** R. Bush: Seneirl Bridge (C943362), 16 July 2000; Conogher Bridge (C963305), 10 September 2000; Stranocum (D009307), Ballyhoe Bridge (D077294), pool beside R. Bush, Ballyhoe Bridge (D077294), 2 July 2000 (Langton, 2002) and Derrykeegan

(C946334), 15 May 2005 (PHL). R. Brymore, Brymore Bridge (D162275) and R. Glendun, Drumfresky, Cushendun (D193308), 2 July 2000 (Langton, 2002). R. Glenarm, Glenarm (D310148), 17 September 2011 (PHL). **HA 5 -** R. Ravernet, Baileysmill, Hillsborough (J324587), 22 June 2000 (Langton, 2002). Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **CARLOW: HA 12 -** R. Slaney, Motabower Bridge (S832778), 28 July 1981 (Hayes, 1991). **CAVAN: HA 7 -** L. Drumkeery, Baileborough (H663002), 12 June, 16 July and 17 September 2007, EPA (DAM). L. Nadreegeal, Ballyjamesduff (N537933), 12 June, 18 July and 17 September 2007, EPA (DAM). L. Acurry, Baileborough (N584990), 5 April and 17 September 2007 (DAM). L. Ramor, Virginia (N603871), May 1971, DJD/DAM (Douglas, 1971); L. Ramor, Virginia (N612860), 12 June, 24 July and 19 September 2007, EPA (DAM). R. Barora tributary, Relaghbeg (N679907), 5 April 1968 (Murray, 1972)**: HA 36 -** Glasshouse L., Killashandra (H270060), 7 June 2007, EPA (DAM). L. Cuillaghan, Ballyconnell (H303183), 6 June and 25 July 2007, EPA (DAM). L. Derrybrick, Milltown, Belturbet (H346117), 5 June, 11 July, 3 and 18 September 2007, EPA (DAM). L. Garty, Arvagh (N278978), 18 July and 18 September 2007, EPA (DAM). L. Gowna, north basin, Arnagahan (N285920), 24 July and 18 September 2007, EPA (DAM). L. Macnean, lower, Blacklion (H106378), 7 June, 23 July and 18 September 2007, EPA (DAM). Mill Lake, Killashandra (H315060), 6 June 2007, EPA (DAM). L. Oughter, Killashandra (H349051), 6 June and 17 July 2007, EPA (DAM). L. Sillan, Shercock (H705067), 19 April, 8 June and 19 September 2007, EPA (DAM). R. Erne: Dingin's Bridge (N331948), 27 August 1982; Kilsarin (N362910), 27 May 1982; Carrigan (N391935), 27 August 1982 and R. Erne, Drumbarry (N462951), 17 August 1982 (all Hayes, 1991). **CLARE: HA 25 -** L. Graney (R568907), 24 May 2003 (PHL); L. Graney: Doorus, west shore (R556930), 4 May, 8 June, 6 July, 3 August, and 6 September 2006, also 11 August 2009, EPA (DAM); Drumandora, west shore (R553938), 15 June 2009, Flagmount, east shore (R563932), 16 September 2009, EPA (DAM). L. Derg, Mountshannon (R718861), 18 September 2009 and d/s Killaloe (M705715), 17 June and 18 September 2009, EPA (DAM). L. Alewnaghta, Whitegate, west shore (R758908), 16 July 2009, EPA (DAM). L. Atorick, Woodford (R637964), 24 May 2003 (PHL)**: HA 27 -** L. Bridget, Derrymore, Badyke, east shore (R558797), 29 July 2009, EPA (DAM). L. Bunny, Aughrim, south east shore (R377965), 11 June 2009, EPA (DAM). Castle L., south west shore, Kilmurry, Sixmilebridge (R481688), 12 June, 17 July and 17 September 2009, EPA (DAM). L. Cullaun, Corrofin mid east shore (R317905), 7 June and 5 September 2006, 16 June, 22 July and 14 September 2009, EPA (DAM). L. Dromore, Ruan, Corrofin (R345858), 8 June 2006, EPA (DAM). Gortglass L., Killadysert (R223596), 2 April, 11 June and 7 July 2009, EPA (DAM). L. Inchiquin, Corrofin (R270895), 4 July, 31 July 2006 also south east shore (R272894), 17 September 2009, EPA (DAM). L. Muckanagh, Tubber, Corrofin (R368926), 2 August 2006, EPA (EPA) and south east shore (R370922), 14 September 2009,

EPA (DAM). L. Rosroe, Newmarket on Fergus, north east shore (R448697), 16 June 2009, EPA (DAM). L. Atedaun, Corrofin (R297884), 21 April 2009 and east lake shore (R300886), 22 September 2009, EPA (DAM)**: HA 28 -** L. Doo, Milltown Malbay (R113722), 1 April, 11 June and 15 September 2009, EPA (DAM). L. Keagh, Milltown Malbay, south west shore, (R100811), 8 July 2009, EPA (DAM), north shore (R100813), 19 September 2012 (DAM). L. Lickeen, Kilfenora (R175909), 3 May, 6 June, 4 July and 6 September 2006 and L. Lickeen, west shore, (R168909), 6 April, 11 June, 21 July and 15 September 2009, EPA (DAM). R. Creegh, Mountrivers Bridge, Doonbeg (Q991659) and R. Doonbeg, Derryard (Q979644), 30 July 1982 (Hayes, 1991)**: HA 29 -** L. Skeardeen, Kilcorkan (R388991), 7 April and 17 June 2009, EPA (DAM). **CORK: HA 18 -** R. Blackwater: Killavullen (W648998), 31 August 1981; Ballymacquirk Bridge, Banteer (W382989) and Lombardstown (W463968), 1 September 1981; Knocknagree (W159975), Duncannon (W180931), Shamrock Bridge, Millstreet (W221935), Charles Bridge, Millstreet (W248943) and Keale Bridge, Millstreet (W294936), 2 September 1981 (all Hayes, 1991)**: HA 19 -** Carrigdroihid Reservoir, Ashton (W360703), 16 September 2008, EPA (DAM). Iniscarra Reservoir, Coachford (W477717), 28 July and 16 September 2008, EPA (DAM). L. Allua, Ballingeary (W180652), 4 April, 17 June, 20 August and 16 September 2008, EPA (DAM). L. Gouganebarra, Inchegeelagh (W009060), 5 April 1966 (Murray, 1972)**: HA 20 -** L. Ballin, Leap (W199389), 21 August 2008, EPA (DAM). L. Cluhir (Cluhir L.), Unionhall (W200325), 30 April 1968 (Murray, 1972). R. Bandon: Long Bridge, Dunmanway (W242631), 18 April to 31 October 1980; Bealabouy Bridge, Dunmanway (W257514), 20 February to 28 November 1980; u/s Ballineen (W331537), 20 February to 25 August 1980; Ballineen Bridge (W434538), 20 March to 25 September 1980; Castle Bernard (u/s Bandon) (W472546), 20 March to 22 December 1980 and 17 January 1981; 2.5km d/s Bandon (W516569), 20 March to 28 November 1980 (all Morgan, 1982). R. Ilen, Drimoleague (W098454), Madore (W103419) and Hollybrook (W117363), 24 August 1983 also R. Ovane, Pierson's Bridge (W023454), 24 August 1983 (Hayes, 1991)**: HA 21 -** L. Bofinna, Bantry (W041488), 11 September 2008, EPA (DAM). L. Glenbeg, Ardgroom (V706530), 15 April, 18 June, 3 and 17 September 2008, EPA (DAM). **DERRY: HA 2 -** R. Ballykelly, Ballykelly (C623211), 9 June 2000 (Langton, 2002). R. Roe, Largy Bridge, Limavaddy (C681202), 14 July 2000 (Langton, 2002). R. Curly, Artikelly Bridge, Limavady (C684247), 9 June 2000 (Langton, 2002). Fire dam 1, Binevenagh Forest, Coleraine (C699304), 18 May 2000 and R. Castle, Ardmore Bridge, Limavady (C706207), 9 June 2000 (all Langton, 2002)**: HA 3 -** Downhill beach stream, Coleraine (C754326), 9 June 2000 (Langton, 2002). Howell's Tarn, Ballywildrick, Coleraine (C766325), 22 April 2001, 7 and 21 April 2002 (PHL); Howell's Tarn stream, Ballywildrick, Coleraine (C766325), 7 April and 7 July 2002 (PHL). Downhill Forest stream, Coleraine (C759348), 21 August 2001 and 24 March 2002 (PHL). Balinrees Reservoir,

Coleraine (C794300) and inflow to Balinrees Reservoir, Coleraine (C793307), 9 June 2000 (Langton, 2002). R. Aghadowey, Ballybritain Bridge (C859212), 26 May 2000 (Langton, 2002). R. Macosquin, Black Bridge, Ballylintagh (C854256), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 18 March to 1 November 1999, 6 April to 8 October 2000, 26 April and 30 June 2001, 22 September 2002, 11 April to 2 May 2010, 27 July to 24 August 2012 (PHL). L. Neagh, (H9080), no data (McLarnon and Carter, 2000); Ballyronan (H948862), 17 March, 10 May and 4 July 2000 (Langton, 2002) and 15 May 2002 and 22 May 2011 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 4 July 2000 (Langton, 2002) and 7 May 2001 (PHL). L. Fea, Draperstown (H760868), 15 May 2002 (PHL). **DONEGAL: HA 1 -** L. Finn, Fintown, Glenties (B911018), 9 June 2009, EPA (DAM). R. Deele, Legland, Raphoe (C136028), 19 July 2000 (Langton, 2002). L. Mourne, Ballybofey (H069900), 9 June 2009, EPA (DAM). L. Derg, Pettigo (H074743), 8 June 2009, EPA (DAM)**: HA 36 -** L. Golagh, Ballyshannon (G965655), 8 June 2009, EPA (DAM). L. Tullynasiddagh, Ballyshannon (G983656), 7 July 2009, EPA (DAM). L. Unshin, Ballyshannon (G951637), 6 July 2009, EPA (DAM). L. Vearty, Ballyshannon (G995658), 8 July 2009, EPA (DAM). L. Avehy, Belalt (H043664), 27 April 2002 and 28 March 2004 (PHL)**: HA 37 -** L. Eske, Donegal (G973844), 17 April, 8 June and 14 July 2009, EPA (DAM). R. Eany, d/s Eanybeg confluence (G842815), R. Eanymore, Letterbara Bridge (G883825) and Drumagraa Bridge (G863822), 10 August 1982 (Hayes, 1991). R. Oily, Claggen (G751803), 8 August 1982 and R. Stragar, Duninkeely (G727792), 10 August 1982 (Hayes, 1991). L. Shinvagh, Carricode (H005675), 27 April 2002 and 28 March 2004 and stream inflow to L. Shinvagh (H005673), 27 April 2002 (PHL)**: HA 38 -** L. Altercan, The Rosses (B755158), 19 July 2000 (Langton, 2002). L. Mulladerg, Rosses (B775199), 19 July 2000 (Langton, 2002). L. Anure, Loughanure, east shore (B818162), 17 June and 12 August 2009, EPA (DAM). R. Gweedore, outflow from L. Anure, Crolly (B827184), 19 July 2000 (Langton, 2002). L. Keel, Crolly (B848162), 7 September 2009, EPA (DAM). L. Nacung, Upper, Dunlewy (B904191), L. Dunlewey, Dunlewy (B926193) and R. Devlin, Dunlewy (B927190), 19 July 2000 (Langton, 2002). R. Tullaghobeg, Millmount (B933304), 12 August 1982 (Hayes, 1991). L. Barra, Commeen (B935119), 10 June 2009, EPA (DAM). R. Owenveagh, Glenbeagh Cottage, GNP, Glenveagh (B990178), 30 July 1985 (Heneghan, 1986). L. Veagh, near Castle, Glenveagh (C022211), 21 August 1985 (Heneghan, 1986), 21 July and 9 September 2009, EPA (DAM); L. Veagh, north east shore near Visitor Centre, Glenveagh (C033223), 19 July 2000 (Langton, 2002). Glenveagh Administration Centre (at light), Glenveagh (C041228), 27 July 1985 (Heneghan, 1986). R. Owencarrow, d/s road bridge, Glenveagh (C043235), 18 July 2000 (Langton, 2002). L. An tSeisigh, Portnablagh (Sheephaven) (C043361), 28 July 2009, EPA (DAM). L. Glen, Glen (C105292), 16 June and 29 July 2009, EPA (DAM). L. Greenan, Loughsalt, Kilmacrennan (C117262), 16 June 2009, EPA

(DAM). L. Salt, Milford (C121256), 16 June, 15 July and 8 September 2009, EPA (DAM). L. Reelan, Reelan (C131272), 6 June, 15 July and 8 September 2009, EPA (DAM). L. Keel, Kilmacrennan (C158243), 2 April and 16 July 2009, EPA (DAM). L. Kindrum, Kindrum, Fanad (C186430), 6 June, 22 July and 9 September 2009, EPA (DAM). L. Kinny, Fanad (C204442), 2 April, 6 June, 21 July and 9 September 2009, EPA (DAM). L. Shannagh, Magheradrumman, Fanad Penninsula (C216450), 2 April, 16 June, 21 July and 9 September 2009, EPA (DAM). L. Kiltoris, Dawros, Ardara (G675976), 17 June and 30 July 2009, EPA (DAM)**: HA 39 -** L. Gartan, Church Hill (C055159), 22 July and 9 September 2009, EPA (DAM) also L. Gartan, Church Hill, north shore (C065173), 18 July 2000 (Langton, 2002). L. Akibbon, Church Hill (C068184), 23 April, 11 June, 22 July and 9 September 2009, EPA (DAM). R. Glashagh, Drumbologe, Letterkenny (C096153), 18 July 2000 and R. Swilly, Newmills, Letterkenny (C125092), 18 July 2000 (Langton, 2002). R. Leannan, Drumaboden (C165218), 12 August 1982 and R. Leannan, Claragh (C197210), 13 August 1982 (Hayes, 1991). L. Fern, Millford (C180233), 2 April, 23 July and 9 September 2009, EPA (DAM) also L. Fern, Milford (C182247), 18 August 2011 (PHL). R. Crana, Buncrana (C347328) and Ballymagan (C379344), 15 August 1982 (Hayes, 1991)**: HA 40 -** L. Naminn, Cloonmany (C400423) and L. Fad, Rowantree Hill, Moville (C539397), 18 August 2011 (PHL). R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991). **DOWN: HA 3 -** Glenaveagh stream, Glenaveagh Bridge (J255284), 26 September 1997 (PHL). **DUBLIN: HA 9 -** R. Dodder - Maureens Brook (O126176), 11 May 2004, JRB (DAM); R. Dodder, Fort Bridge, Bohernabreena (O009242), 29 August 1950, CFH (DAM) and 21 July 1966 (Murray, 1972); R. Dodder, Milltown (O168303), 14 May 1946 (Grey, 1946). **FERMANAGH: HA 35 -** L. Melvin, Garrison (G938518) and Glen R., Garrison (G943522), 29 June 2000 (Langton, 2002)*:* **HA 36 -** L. Erne Upper, slipway (H362242), 27 June 2000 (Langton, 2002); L. Erne, Lower, Boa Island (H108626), 29 June 2000 (Langton, 2002) also 17 August 2011 (PHL); L. Erne, Lower, Black Bay (H072639), 27 April 2002 and 22 March 2003 (PHL). L. Lattone, Kiltyclogher (H003456), 29 June 2000 (Langton, 2002). L. Macnean, Upper, Belcoo (H042403) and L. Macnean, Lower, Belcoo (H085384), 29 June 2000 (Langton, 2002). R. Finn, Lisnanesnagh Bridge (H544337), 26 June 2000 and R. Hollybrook, Lisnaskea (H373310), 27 June 2000 (Langton, 2002). L. Keenaghan, Beleek (G974600), 28 March 2004 (PHL). R. Bannagh, Drummoney Falls, Pettigo (H168676), 17 August 2011 (PHL). **GALWAY: HA 25 -** R. Woodford, bridge on R351, Woodford (M732000), 24 May 2003 (PHL)**: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 (Hayes, 1991)**: HA 29 -** L. Rea, Loughrea (M615154), 14 June, 7 August and 18 September 2007, EPA (DAM) also L. Rea, east shore (M624153), 25 May 2003 (PHL)**: HA 30 -** L. Anillaun, Maam Cross (L980470), 8 June and 5 September 2007, EPA (DAM). L. Ballyquirke, Moycullen (M232317), 14 September 2007,

EPA (DAM). L. Beaghcauneen, Ballinaboy (L679470), 5 April, 6 June and 18 July 2007, EPA (DAM). L. Bofin, Maam Cross (M034441), 18 April, 7 June, 31 July and 17 September 2007, EPA (DAM). L. Corrib Upper, Oughterard (M138486), 11 June, 14 August and 14 September 2007, EPA (DAM); L. Corrib, no data (M150450), 1980, BC (DAM); L. Corrib Lower, Moycullen (M271360), 11 April, 11 June, 28 August and 18 September 2007, EPA (DAM). L. Lettercraffroe, Oughterard (M056376), 18 April 2007, EPA (DAM). L. Maumwee, Maam Cross (L977485), 12 July and 17 September 2007, EPA (DAM). L. Ross, Moycullen (M188365), 13 April, 14 June, 8 August and 5 September 2007, EPA (DAM) also L. Ross (M200363), 25 May 2003 (PHL). R. Loughkip, Ballyquirk, Moycullen (M224313), 17 August 1981 (Hayes, 1991). R. Cregg, Addergsole Bridge (M324350), 16 August 1981 (Hayes, 1991). R. Owenriff, Oughterard (M112426), 25 May 2003 (PHL)**: HA 31 -** L. Anaserd, Ballyconneely (L605443), 20 April and 20 June 2006 also 4 April and 6 June 2007, EPA (DAM). L. Ardderry, Maam Cross (L982458), 18 April, 7 June, 1 August and 17 September 2007, EPA (DAM) also (L998458), 25 May 2003 (PHL). L. Aunwillan, Carraroe (L936255), 16 April, 7 June and 13 September 2007, EPA (DAM). L. Ballynahinch, Ballynahinch (L777478), 17 April, 6 June, 23 July and 13 September 2007, EPA (DAM). L. Ballynakill, Gorumna (L867236), 19 April 2006, EPA (DAM). L. Derryclare, Recess (L825485), 17 April, 6 June and 13 September 2007, EPA (DAM). L. Nahasleam, Maam Cross (L972440), 6 April, 16 May, 20 June, 8 August and 12 September 2006, 19 April, 7 June and 13 September 2007, EPA (DAM). L. Shindilla, Derreennacreeva (L958460), 12 September 2006 and 19 April, 26 July, 7 August and 13 September 2007, EPA (DAM). R. Owentouey, Tullywee Bridge, Recess (L873474), 18 August 1981 (Hayes, 1991)**: HA 32 -** L. Aughrusbeg, Cleggan (L557582), 3 April, 5 June, 10 July and 11 September 2007, EPA (DAM). L. Ballynakill, Cleggan (L639581), 3 April, 5 June and 11 July 2007, EPA (DAM). L. Enask, Beaghcauneen (L662468), 17 July 2007, EPA (DAM). L. Fadda, Beaghcauneen (L668455), 6 June, 17 July and 11 September 2007, EPA (DAM). R. Owenglin, Clifden (L677506), 18 August 1981 (Hayes, 1991). L. Tully, Tully Cross (L695618), 10 September 2007, EPA (DAM). L. Nambrackmore, Ballinaboy, Toombeola (L716454), 5 April, 6 June, 27 July and 12 September 2007, EPA (DAM). R. Dawros, Tullywee Bridge, Letterfrack (L730586), 18 August 1981 (Hayes, 1991). L. Pollacappul, Kylemore (L754582), 2 April, 5 June, 9 July and 10 September 2007, EPA (DAM). L. Kylemore, Letterfrack (L771582), 2 April, 5 June, 30 July and 10 September 2007, EPA (DAM). **KERRY: HA 18 -** R. Blackwater, Lacknastooka (R153008), 2 September 1981 (Hayes, 1991)**: HA 21 -** L. Brin, Derreeny (V780775), 16 April, 18 June, 13 July and 10 September 2008, EPA (DAM). L. Cloonaghlin, Waterville (V611708), 8 May and 19 June 2008, EPA (DAM). L. Currane, Waterville (V535664), 9 May, 22 July and 10 September 2008, EPA (DAM). Eagles L., Knocknagantee (V674728), 9 August 2005, JRB (DAM). L. Eirk, Derrygarriff (V881777), 25

April and 9 August 2005, JRB (DAM). L. Inchiquin, Kenmare (V837629), 15 April, 1 and 17 September 2008, EPA (DAM). L. Namona, Waterville (V596711), 19 June, 23 July and 10 September 2008, EPA (DAM). R. Inny, Scarriff Bridge (V504696) and u/s Waterville (V525704), 24 August 1983 (Hayes, 1991)**: HA 22 -** L. Acoose, Slievanore, Killorglin (V755854), 24 April, 19 June, 9 July and 9 September 2008, EPA (DAM). L. Caragh, Killorglin (V719904), 20 June 2008, EPA (DAM). L. Coomloughra, Caher Mountain, Carrauntoohil (V783849), 26 April 2005, JRB/MC (DAM). L. Cummernamuck, Killorglin (V745897), 20 June, 18 July and 9 September 2008, EPA (DAM). L. Guitane, Crohane, Killarney (W025846), 16 May 2005, 21 April, 26 June, 8 July and 9 September 2008, EPA (DAM). Killarney, no data (V9589), 1928, FWE (Edwards, 1929). L. Leane, Killarney, Brickeen (V937850), 3 July 1973 and Mahony's Point (V932912), July 1973 (Douglas and Murray, 1980); L. Leane, Killarney (V931886), 22 April, 24 June and 10 July 2008, EPA (DAM). Muckross Lake, Dundag Bay (V964858), 13 August 1973 (Douglas and Murray, 1980), mid lake (V950853), 24 April, 24 June and 16 July 2008, EPA (DAM). Upper Lake, Killarney (V909821), 17 July and 9 September 2008, EPA (DAM). L. Reagh, near R. Gearhameen (V820808), July 1973 (Douglas and Murray, 1980). R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Caragh: Upper Brida Valley (V785810), Lower Brida Valley (V740805), d/s Owenroe R. confluence (V720815), Bealalaw Bridge (V715832), Blackstones Bridge, d/s R. Acoose confluence (V710864) and outflow from L. Caragh (V713924), 1975, CD (Dowling *et al.*, 1981). R. Clydagh, u/s Clydagh Bridge (W114826), April to November 1978, January-March 1979 (Ashe, 1982). R. Flesk, d/s Clydagh/Loo confluence (W084814), Garries Bridge (W082835), Flesk Bridge (W034876), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894) also R. Loo, Aughnanus Bridge, Crohane (W045790), April to November 1978, January-March 1979 (Ashe, 1982). **KILDARE: HA 7 -** R. Boyne, Ballyboggan (N639402), 9 July 1981 (Hayes, 1991)**: HA 9 -** R. Liffey, Sallins (N881245), 17 July 1983 (Hayes, 1991); R. Liffey, Straffan Bridge (N924293), 1929, WEF (Humphries and Frost, 1937). **KILKENNY: HA 15 -** R. Nore: Threecastles (S458626), 27 August; Ballyragget (S445707), Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (all Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Castletown Bridge (S326930) and u/s Durrow (S416787), 27 August 1981 and Athanagh (S423763), 28 August 1981 (Hayes, 1991). **LEITRIM: HA 26 -** L. Allen, Mountallen, Drumshanbo (G950145), 28 April, 10 June and 7 August 2008, EPA (DAM). L. Boderg, Derrycarne, north west shore (N013915), 14 May, 29 July and 10 September 2008, EPA (DAM). L. Bofin, Rinnafarna, Dromod (N036891), 24 June, 29 July and 10 September 2008, EPA (DAM). L. Rinn, Mohill (N095943), 10 September 2008, EPA (DAM)**: HA 35 -** L. Belhavel, Killarga, Dromahair (G878288), 2 April, 10 June and 26 August 2008, EPA (DAM). L. Glenade, Glenade, Manorhamilton (G831457), 10 June 2008, EPA (DAM). L. Glencar,

Glencar (G748434), 1 April, 10 June, 21 July and 2 September 2008, EPA (DAM)**: HA 36 -** L. Drumlaheen, Feenagh, Ballinamore (H091071), 18 June and 17 July 2007, EPA (DAM). **LIMERICK: HA 25 -** R. Mulkear, d/s Cappamore (R779504) and Dromkeen Bridge (R741480), 8 September 1981 (Hayes, 1991). **LONGFORD: HA 26 -** L. Forbes, Cloonard, Newtownforbes (N084821), 27 August and 10 September 2008, EPA (DAM). L. Ree: Bleanavoher (N069445), 13 June and 10 September 2007, EPA (DAM). **MAYO: HA 26 -** L. Nanoge, Urlaur (M506903), 24 April, 18 June and, 23 September 2008, EPA (DAM)**: HA 30 -** L. Aille, Aille, Westport (M071807), 22 April, 8 August and 18 September 2008, EPA (DAM). L. Carra, Keel Bridge, Ballinrobe (M165680), 28 July and 26 September 2008, EPA (DAM). L. Mask, west shore, Toormakeady (M097647), 14 April, 24 June and 22 September 2008, EPA (DAM)**: HA 32 -** L. Doo, Delphi, south east shore (L844677), 25 June 2008, west shore (L835681), 5 April, 9 May, 28 June, 12 July and 16 August 2006, also 3 April and 25 August 2008, EPA (DAM); north east shore (L834689), 6 June and 22 August 2002 (Murray, 2005). L. Glencullin, Delphi (L818711), 26 June and 22 September 2008, EPA (DAM). L. Fin, Delphi (L841657), 5 April, 9 May, 28 June, 12 July and 11 September 2006, EPA (DAM). Nahaltora stream, first road bridge d/s L. Nahaltora, Derrygarve, Cregganbaun (L784744), 6 June 2004, DAM/WM (DAM). R. Burleemslough, Clapper Bridge Ford (u/s Roonagh L.), Killeen, Cloonlaur (L754759), 5 August 2004, DAM/WM (DAM). R. Bunowen, Louisburg, u/s of bridge, Louisburg (L807807), 30 September 2004, DAM/WM (DAM). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). L. Feeagh, Newport (L975983), 16 December 1965 (Murray, 1972) also 25 June and 24 July 2008, EPA (DAM). L. Moher, Liscarney, Westport (L977766), 21 April, 24 June and 18 September 2008, EPA (DAM). Westport L., Westport Woods Hotel, Westport (L985843), 7 May and 30 September 2004, DAM/WM (DAM). L. Ballin, Westport, south shore (L994878), 22 April 2008, EPA (DAM) and north shore (L996882), 18 September 2008, EPA (DAM). L. Knappabeg, Westport (M010803), 21 April and 23 July 2008, EPA (DAM)**: HA 33 -** L. Acorrymore, Achill Island (F578057), 5 August 2004, DAM/WM (DAM). L. Keel, Achill Island: outflow (F649050), 29 September 2004, DAM/WM (DAM); north shore (F650058), 7 April 2008, EPA (DAM); south east shore (F650051), 17 June 2008; mid lake (F651059), 16 July 2008; south west shore (F641055), 17 September 2008, EPA (DAM). L. Bunacurry, Achill Island (F695048), 29 September 2004, DAM/WM (DAM). L. Carrowmore, Bangor Erris: Gortmore shore (F833266), 29 September 2004, WAM (DAM); Knocknascollop shore (F830282), 17 September 2008, EPA (DAM); Derreens (F833299), 9 April and 28 July 2008, EPA (DAM); Cloontakilla shore (F851253), 17 June 2008, EPA (DAM). R. Owenmore, Bangor Erris (F863228), 18 August 1983 (Hayes, 1991)**: HA 34 -** L. Alone, Ox Mountains (G367157), 22 April and 5 August 2005, JRB/MC (DAM). L. Conn: Longford Point, Crossmolina (G155172), 29 March 1965, AJOS

(DAM); Cloghans (G205133), 28 March and 13 August 1965, AJOS (DAM); Errew (G167118), 31 March and 1 October 1965, AJOS (Murray, 1972); Brackwansha (G191098), 6 April, 25 May and 24 September 1965, AJOS (DAM); Six Arch Bay (G227052), 30 March and 20 August 1965, AJOS (DAM); west shore (G165144), 15 April 2008, EPA (DAM); Illannaglashy (G207070), 20 August 2008, EPA (DAM). L. Cullin, Drummon Wood (G235046), 18 June and 20 August 2008, EPA (DAM). L. Lannagh, Castlebar: west shore (M109883), 23 April and 21 August 2008, EPA (DAM); north east basin (M137899), 26 September 2008, EPA (DAM). L. Mallard, Castlebar (M121902), 30 September 2004, DAM/WM (DAM). L. Levally, Massbrook (G146043), 25 June and 23 September 2008, EPA (DAM). L. Washpool, Ballycarra (M219842), 23 April and 19 June 2008, EPA (DAM)**: Clare Island -** roadside at Bayview Hotel (L716856), 21 August 2002; Pollabrandy stream, Knocknaveen (L704858), 4 June 2002 and Loughnapucar stream (L657850), 21 August 2002 (Murray and Murray, 2003). **MEATH: HA 7 -** R. Kinnegad, Kinnegad (N601448), June 1989 (Murray and Lynch, 1991). R. Boyne: New Bridge, Navan (N873679), 18 August 1988 (Murray, 1988); Stackallen Bridge (N917713), 19 July 1989 (DAM) and Oldbridge (O045761), 19 July 1989 (DAM). R. Blackwater: Bloomsbury Bridge, Oristown (N793741) and Donaghpatrick (N819723), 19 August 1988 also Poolboy Bridge, Navan (N871681), 18 August 1988 (Murray, 1988)**: HA 8 -** R. Nanny tributary, Boolies, Duleek (O044654), 6 June 2006, DAM/WM (DAM). **MONAGHAN: HA 6 -** L. Naglack, Carrickmacross (H853026), 11 June 2007, EPA (DAM)**: HA 36 -** L. Annaghmakerrig, Newbliss (H585205), 22 May 2006, EPA (DAM). L. Avagnon, Latton, Cotehill (H688133), 4 April and 6 June 2007, EPA (DAM). L. Drumlona, Rockcorry (H636176), 5 June 2007, EPA (DAM). L. Drumore, Drum (H614164), 18 July 2007, EPA (DAM). L. Summerhill, Clones (H490279), 26 July 2007, EPA (DAM). **OFFALY: HA 25 -** R. Shannon, Shannon Bridge (M967254), 15 August 1981 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck: Castlecoote (M809627), 16 July 1981; Athleague (M825758), 14 August 1981; Mount Talbot (M813531), 14 August 1981; Ballyforan (M817464), 16 July 1981 and Newtown (M844346), 15 August 1981 (Hayes, 1991). L. Meelagh, Keadew (G901117), 11 June and 12 July 2008, EPA (DAM). L. Annaghmore, Strokestown, Elphin (M902838), 12 June and 2 September 2008, EPA (DAM). L. Cavetown, Boyle (M832974), 11 June, 17 July and 9 September 2008, EPA (DAM). L. Key, Boyle: pier at Forest Park Centre (G848040), 11 June 2008, EPA (DAM); Boyle (G838057), 6 August 2008, EPA (DAM); Hogs Island Pier (G825054), 9 September 2008, EPA (DAM). L. O'Flynn, Ballinlough (M585786), 9 April, 12 June and 16 July 2008, EPA (DAM). L. Urlar, north east shore (at Abbey) (M508900), 10 March 2005, DAM/WM (DAM). L. Ree, Yew Point, Barley Harbour (N018485), 13 June and 11 September 2007, EPA (DAM). **SLIGO: -** L. Gara, Cuppanagh, Cloonlough (G714013), 26 June and 30 September 2008, EPA (DAM)**: HA 34 -** L.

Talt, Gleneask (G402151), 18 June and 15 July 2008, EPA (DAM). R. Moy, Cloonacool (G493168) and Annagh (G466123), 30 August 1982 (Hayes, 1991)**: HA 35 -** L. Arrow, Ballinafad (G789123), 29 April, 11 June, 30 July and 9 September 2008, EPA (DAM). L. Easky, Ox Mountain (G446230), 10 April, 18 June and 25 September 2008, EPA (DAM). Templehouse L., Ballymote (G619182), 30 April and 9 September 2008, EPA (DAM). L. Gill, Sligo (G782350), 3 April, 11 June and 8 September 2008, EPA (DAM). R. Drumcliff, Glencar (G734430), 19 August 1983 (Hayes, 1991). **TIPPERARY: HA 16 -** Brownstown R., Kilclonagh (S167655), R. Drish, Castletown (S207634) and R. Suir, Rossestown Bridge (S134624), 6 July 1992 (Murray and Lynch, 1992)**: HA 18 -** L. Curra, Galtymore Mountain (R867242), 26 May and 10 August 2005, JRB (DAM)**: HA 25 -** L. Derg, Dromineer (M809858), 17 June 2009, EPA (DAM). **WATERFORD: HA 18 -** R. Blackwater, Ballyduff (W964992) and Lismore (X047988), 31 August 1981, BPH (Hayes, 1991). **WESTMEATH: HA 7 -** L. Lene (N510685), 26 April, 27 June, 22 August and 19 September 2006, EPA (DAM)**: HA 25 -** stream supply to fish farm, Cullion (N430557), May 1990 (Murray, 1990). L. Ennell, Tudenham (N415466), 1981 (Forde, 1985)**: HA 26** - L. Owel, Mullingar (N421566), May and June 1973, NH (DAM). L. Killinure: Ballaghkeernan Bay (N069445), 26 June 2007, Wineport (N067458) and Ballaghkeernan Bay (N069445), 15 August 2007, EPA (DAM). L. Ree, Coosan (N050450), 15 August 2007, EPA (DAM). L. Derravaragh, Crookedwood (N468634), 25 June and 30 August 2007, EPA (DAM)**: HA 36 -** L. Bane, Collinstown (N550712), 26 June and 22 August 2006, EPA (EPA). **WEXFORD: HA 12 -** R. Boro, Dunamore Bridge, Enniscorthy (S963366), R. Slaney, Clomahon (S933534) and Edernline Bridge (S977345), 29 July 1981 (Hayes, 1991)**: HA 13 -** R Tintern, Tintern Abbey (S792100) and estuary bridge (S794099), 13 June 2012 (DAM). **WICKLOW: HA 9 -** R. Liffey, Ballysmuttan Bridge (O157148), 1929, WEF (Humphries and Frost, 1937)**: HA 10 -** L. Ouler, Tonelagee (O091023), 8 August 2005, JRB (DAM). L. Bray Lower, Glencree (O140163), 16 June 2009, EPA (DAM). L. Dan, Roundwood (O157035), 30 March 2009, EPA (DAM); L. Dan, Oldbridge (O157024), 30 September 1982, L. Frey (DAM). Glencullen R.: Brockey (O169207), Glencullen Bridge (O192194) and Enniskerry Bridge (O227173), 1970, KC (Clabby and Bracken, 1976); Knocksink (O218180), 24 July 1987, DEM/DAM (Morgan, 1989; Murray, 2005). L. Tay, Luggala (O163008), 16 June 2009, EPA (DAM). Vartry Reservoir, Roundwood, north basin (O205050), 6 April 2009, EPA (DAM). R. Avonbeg, Drumgoft Bridge, Glenmalure, (T105905), 4 August 1983 (Hayes, 1991); R. Avonbeg, Meetings Bridge (T188831), 11 July and 27 October 1997 (Curran, 2001). R. Avonmore, Castlehoward (T190833), 4 August 1983 (Hayes, 1991) and Lion Arch Bridge (T194833), 11 July and 27 October 1997 (Curran, 2001). R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991), 11 July and 27 October 1997 (Curran, 2001); R. Avoca, Avoca Village (T203802), 11 July 1997, FC/DAM

(Curran and Murray, 2001)**: HA 12 -** R. Derry, Bridgeland (T021744), 29 July 1981, BPH (Hayes, 1991). R. Slaney, Stratford Bridge (S895930) and Kilmurray (S889856), 28 July 1981, BPH (Hayes, 1991).

***Thalassosmittia thalassophila* (Bequaert and Goetghebuer, 1914)**
CLARE: HA 27 - seafront, Diamond Rock, Kilkee (Q868600), 26 July 1999, DAM/WM (Murray, 2000). **DERRY: HA 3 -** R. Bann, Coleraine (C854304), 4 June, 24 July, 8 and 26 August, 7 and 22 September 1999, 17, 25 and 31 May, 8 October 2000, 16 June 2001, 3, 10, 17 and 24 August 2012 (PHL). **DUBLIN: DUBLIN: HA 8 -** seacoast rock pool, Skerries (O242610), 13 July 1999 (Murray, 2005)**: HA 9 -** salt marsh, Baldoyle (O247403), 5 November 1990, BH (DAM). **HA 8 -** seacoast rock pool, Skerries (O242610), 13 July 1999 (Murray, 2005). **GALWAY: HA 31 -** Mweenish Bay, Carna (L776320), June 1977, SC (DAM). **MAYO: HA 32 -** coastal stream at "Archeological site 9", Murrisk (L908825), 7 May 2004, DAM/WM (DAM). Seacoast, south of Roonagh Pier, Roonagh (L744808), 27 July 2000, DAM/WM (DAM). Seashore at stream outflow, Killary (L869694), 5 June 2002, DAM/WM (DAM)**: Clare Island -** beach at Bayview Hotel, Clare Island (L717857), 28 April 2000, 20 and 22 August 2002 (Murray and Murray, 2003). Cove, south of Graine Wael Castle (L716851), 5 June 2002 (Murray and Murray, 2003). Portakilly Harbour, Strake (L692842), 5 June 2002 (Murray and Murray, 2003). **WEXFORD: HA 13 -** rock pool, Carnsore (T124046), 18 April 1976, BH (DAM).

***Thienemannia gracilis* Kieffer, 1909**
DONEGAL: HA 38 - stream tributary to R. Owenveagh, Glenbeagh Cottage, GNP, Glenveagh (B998175), 4 June 1986 (Heneghan, 1986; Murray, 1996, 2005). **MAYO: Clare Island -** roadside at Bayview Hotel, Clare Island (L717857), 29 April 2000 (Murray and Murray, 2003).

***Thienemanniella acuticornis* (Kieffer, 1912)**
FERMANAGH: HA 35 - Glen R., Garrison (G943522), 29 June 2000 (Langton, 2002). **KERRY: HA 22 -** Killarney (V9589), 1928, FWE (Edwards, 1929 - sub *T. morosa*). R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Flesk, d/s Clydagh/Loo confluence (W084814), August 1978 (Ashe, 1982)**: HA 23 -** R. Owenmore, 3km u/s Boherboy (Q496083), 2 May 1999, CB (PJA - sub *T. morose*/NMI). **MAYO: HA 32 -** R. Owenwee, u/s Aghamore Bridge, Westport (L972817), 5 August 2004, DAM/WM (DAM).

***Thienemanniella clavicornis* (Kieffer, 1911)**
DUBLIN: HA 9 - R. Dodder, Bohernabreena aqueduct (O101208), 3 April 1967 and

Bohernabreena aqueduct (O104205), 1 May 1967 (Murray, 1972). **KERRY**: **HA 22 -** R. Flesk, d/s Whitebridge (V987900), June 1978 (Ashe, 1982). **MAYO: HA 32 -** R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). R. Owenwee, u/s Aghamore Bridge, Westport (L972817), 8 May 2003 (Murray, 2005). **MEATH: HA 7 -** R. Boyne, Bellinter Bridge (N894625), 18 August 1968 (Murray, 1972).

***Thienemanniella flavescens* (Edwards, 1929)**
KERRY: HA 22 - Killarney (V9589), 1928, FWE (Edwards, 1929). R. Caragh: Upper Brida Valley (V785810), Lower Brida Valley (V740805), d/s Owenroe R. confluence (V720815) and outflow from L. Caragh (V713924), 1975, CD (all Dowling *et al.*, 1981).

***Thienemanniella majuscula* (Edwards, 1924)**
DONEGAL: HA 38 - L. Veagh, shore near north east inflow stream, GNP, Glenveagh (C033222), 15 August 1985 (Heneghan, 1981; Murray, 2005). **MAYO: HA 32 -** R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972)**: Clare Island -** first order stream west of Maum road (L711861), 5 June 2002, Knockaveen hillside (L698858), 28 April 2002 and Loughnapucar stream (L658848), 21 August 2002 (all Murray and Murray, 2003).

***Thienemanniella obscura* Brundin, 1947**
DERRY: HA 1 - Upper Creggan Reservoir, Creggan, Derry (C413171), 23 March 2001 (Langton, 2004).

***Thienemanniella vittata* (Edwards, 1924)**
CARLOW: HA 12 - R. Slaney, Kildavin (S899597), 28 July 1981 and R. Derreen, Acann Bridge (S900781), 29 July 1981 (Hayes, 1991). **CAVAN: HA 36 -** R. Erne, Kilsarin (N362910), 27 May 1982, Carrigan (N391935), 27 August 1982 and Drumbarry (N462951), 17 August 1982 (all Hayes, 1991). **CLARE: HA 25 -** L. Graney, Flagmount, east shore (R563932), 16 September 2009, EPA (DAM)**: HA 28 -** R. Doonbeg, Derryard (Q979644), 30 July 1982 (Hayes, 1991). **CORK: HA 18 -** R. Blackwater, Knocknagree (W159975) and Keale Bridge, Millstreet (W294936), 2 September 1981 (Hayes, 1991)**: HA 20 -** R. Ovane, Pierson's Bridge (W023454), 24 August 1983 (Hayes, 1991). **DERRY: HA 3 -** inflow to Balinrees Reservoir, Coleraine (C793307), 9 June 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 5 May, 10 June and 8 August 1999 (PHL). **DONEGAL: HA 1 -** R. Deele, Legland, Raphoe (C136028), 19 July 2000 (Langton, 2002)**: HA 38 -** R. Owenveagh, Glenbeagh Cottage, GNP, Glenveagh (B990178), 30 July 1985 (Heneghan, 1986)**: HA 39 -** R. Glashagh, Drumbologe, Letterkenny (C096153), 18 July 2000 (Langton, 2002). R. Leannan, Drumaboden (C165218), 12 August

1982 and Claragh (C197210), 13 August 1982 (Hayes, 1991). R. Crana, Buncrana (C347328) and Ballymagan (C379344), 15 August 1982 (Hayes, 1991). **FERMANAGH: HA 35 -** Glen R., Garrison (G943522), 29 June 2000 (Langton, 2002). **GALWAY: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 (Hayes, 1991). R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991)**: HA 30 -** stream at N59 picnic site, Moycullen (M204326), 25 May 2003 (PHL). R. Loughkip, Ballyquirk, Moycullen (M224313), 17 August 1981 (Hayes, 1991)**: HA 31 -** R. Owentouey, Tullywee Bridge, Recess (L873474), 18 August 1981 (Hayes, 1991)**: HA 32 -** R. Owenglin, Clifden (L677506) and R. Dawros, Tullywee Bridge, Letterfrack (L730586), 18 August 1981 (Hayes, 1991). **KERRY: HA 18 -** R. Blackwater, Lacknastooka (R153008), 2 September 1981 (Hayes, 1991)**: HA 21 -** R. Inny, Scarriff Bridge (V504696) and u/s Waterville (V525704), 24 August 1983 (Hayes, 1991)**: HA 22 -** Muckross Lake, Muckross, Killarney (V950853), 24 June 2008, EPA (DAM). R. Annascaul, Annascaul (Q593017), 2 July 1981, BPH (Hayes, 1991). Ashe (1982) recorded this species as *Thienemanniella* sp. 1 at the following sites in HA 22 on the Rivers Clydagh, Flesk and Loo monthly between April and December 1978 and in March 1979: R. Clydagh, Caherbarnagh (W202842), u/s Clydagh Bridge (W114826) and Knocknagowan (W187837). R. Flesk, d/s Clydagh/Loo confluence (W084814), Garries Bridge (W082835), Flesk Bridge (W034876), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894). R. Loo, Aughnanus Bridge, Crohane (W045790). **KILDARE: HA 9 -** R. Rye, Leixlip (N993370), 21 January 1968 (Murray, 1972). **KILKENNY: HA 15 -** R. Nore: Threecastles (S458626), 27 August 1981; Ballyragget (S445707), Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (all Hayes, 1991). **LAOIS: HA 15 -** R. Nore: Castletown Bridge (S326930), Kilbricken (S362898), Shanahoe Bridge (S407858), u/s Durrow (S416787), 27 August 1981 and R. Nore, Athanagh (S423763), 28 August 1981 (all Hayes, 1991). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514) and d/s Cappamore (R779504), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** R. Bunowen, Louisburg, u/s of bridge (L807807), 30 September 2004. R. Owengarve, Rosgalliv Bridge, Mulranny (L886962), 4 August 2004 and R. Owenwee, Belclare Bridge, Westport (L959822), 30 September 2004, DAM/WM (all Murray, 2005)**: HA 34 -** Castlebar L., north shore, Castlebar (M106879), 7 May 2004, DAM/WM (DAM). R. Moy, Bellanacurra (G403047), 29 August 1982 (Hayes, 1991). **MEATH: HA 6 -** R. Dee, Drumconrath (N910894), 27 July 1983 (Hayes, 1991). **MONAGHAN: HA 36 -** L. Corconnolly, Clones (H510247), 3 May 1967, NH (Murray, 1972). **OFFALY: HA 25 -** R. Little Brosna, Milltown Park (S068907), Brosna Bridge (S077938) and Sharavogue (S056953), 2 September 1982 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627) and Ballyforan (M817464), 16 July 1981 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168), 30 August 1982 (Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430), 19

August 1983 (Hayes, 1991). **TIPPERARY: HA 25 -** R. Kilmastulla, Kilmastulla Bridge (R728698), 3 September 1981 (Hayes, 1991). **WATERFORD: HA 18 -** R. Blackwater, Lismore (X047988), 31 August 1981 (Hayes, 1991). **WEXFORD: HA 12 -** R. Boro, Dunamore Bridge, Enniscorthy (S963366) also R. Slaney, Clomahon (S933534) and Edernline Bridge (S977345), 29 July 1981 (Hayes, 1991). **WICKLOW: HA 10 -** R. Avonbeg, Drumgoft Bridge, Glenmalure, (T105905), 4 August 1983 (Hayes, 1991)**: HA 12 -** R. Slaney, Knickeen, Glen of Imail (S987948), 28 July 1981 (Hayes, 1991; Murray, 2005) also Knockgarrigan, Glen of Imail (S936937) and Stratford Bridge (S895930), 28 July 1981 (Hayes, 1991).

***Trissocladius brevipalpis* Kieffer, 1908**

DONEGAL: HA 38 - stream (outflow from pond) near Administration Centre, GNP, Glenveagh (C041227), 14 May 1986 (Heneghan, 1986; Murray, 2005).

***Tvetenia bavarica* (Goetghebuer, 1934)**

ANTRIM: HA 4 - R. Glenariff (Inver/Glenariff), Cushendall (D215205), 2 July 2000 (Langton, 2002). Outflow stream, L. na Cranagh, Fair Head (D178425), 21 March 1999 (PHL)**: HA 5 -** Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **CORK: HA 20 -** R. Bandon, 2.5km d/s Bandon (W516569), 17 January 1981 (Morgan, 1982). **DERRY: HA 1 -** inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 23 March 2001 (PHL)**: HA 2 -** R. Bessbrook, Limavady (C655212) and burn at Largantea picnic area, Formoyle, Coleraine (C738287), 9 June 2000 (Langton, 2002)**: HA 3 -** Howell's Tarn stream, Ballywildrick, Coleraine (C766325), 7 July 2002 (PHL). Downhill Lake, Downhill Forest, Coleraine (C757354) 17 March 1999; Downhill Forest Stream (C759348), 17 March and 25 July 1999 (PHL). R. Bann, Coleraine (C854304), 29 March and 13 October 1999, 1 January to 19 February and 8 October 2000 (PHL). **DONEGAL: HA 38 -** inflow stream to north east shore of L. Veagh, Glenveagh, GNP, 50m from lake (C030218), 14 May 1986 (Heneghan, 1986). **DOWN: HA 3 -** Upper R. Bann tributary, Tullyconnaught (J166451), 27 August 1998 (PHL). **DUBLIN: HA 9 -** R. Dodder, Fort Bridge, Bohernabreena (O009242), 5 April 1949 (Reilly, 1951). **KERRY: HA 21 -** Eagles L., Knocknagantee (V674728), 25 April 2005, JRB/MC (DAM)**: HA 22 -** Curraghalia stream, north west of Moll's Gap (V845789), 17 April 2004, JRB (DAM). R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Caragh, Lower Brida Valley (V740805), 1975, CD (Dowling *et al.*, 1981). R. Flesk, White Bridge (V987904), September 1972 (DAM; Douglas and Murray, 1980); d/s Whitebridge (V987900), July to September 1972 (Douglas, 1975; Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), January 1979 (Ashe, 1982). R. Torc upper, Torc Mountain, Killarney (V959830), July 1972, DAM (Douglas and Murray, 1980). **LEITRIM: HA 35 -** L. Glencar, Glencar

(G757435), 2 September 2008, EPA (DAM). **MAYO: HA 33 -** Keem stream, Keem Bay, Achill Island (F561045), 5 August 2004, DAM/WM (DAM). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627) and Ballyforan (M817464), 16 July 1981 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Carrowneden (G530205), 30 August 1982 (Hayes, 1991). **WICKLOW: HA 10 -** R. Glencullen tributary, Glendoo (O160212); R. Glencullen, Brockey (O169207), u/s Glencullen Bridge (O190195) and d/s Glencullen Bridge (O195193), 1970, KC (Clabby and Bracken, 1976); R. Glencullen, Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989)**: HA 12 -** R. Slaney, Knickeen, Glen of Imail (S987948), 28 July 1981 (Hayes, 1991; Murray, 2005).

***Tvetenia calvescens* (Edwards, 1929)**

ANTRIM: HA 3 - R. Clogh, Clough Mills (D105109) and Glenravel Water, Gartnageeragh, Newtown Crommelin (D147154), 2 July 2000 (Langton, 2002). L. Neagh: Antrim Bay (J135866), 4 May and 28 March 2001 (PHL); Churchtown Point (J056852), 13 October 2000 (Langton, 2002) and 8 October 2006 (PHL). R. Main, Randalstown (J084904), 13 October 2000 and R. Kells, Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002). R. Sixmilewater, Templepatrick (J227867) and Killylane Reservoir, Magherabane, Larne (J292985), 4 May 1999 (PHL)**: HA 4 -** R. Bush: Seneirl Bridge (C943362), 16 July 2000; Conogher Bridge (C963305), 10 September 2000; Stranocum (D009307) and Ballyhoe Bridge (D077294), 2 July 2000 (all Langton, 2002). R. Brymore, Brymore Bridge (D162275), R. Glendun, Drumfresky, Cushendun (D193308) and R. Glenariff (Inver/Glenariff), Cushendall (D215205), 2 July 2000 (Langton, 2002). Benvarden Pond, Benvarden Garden, Derrykeegan (C946334), 15 May 2005 (PHL). R. Glenaan, Cushendall (D218288), 17 September 2011 (PHL). R. Glenarm, Glenarm (D310148), 17 September 2011 (PHL). Inlet stream to L. na Cranagh, Fair Head (D183427), 21 March 1999 (PHL)**: HA 5 -** R. Ravernet, Baileysmill, Hillsborough (J324587), 22 June 2000 (Langton, 2002). Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **ARMAGH: HA 3 -** R. Closet, Derrymacash Bridge, Portadown (J044595), April 1956, CFH (CFH/slide collection DAM). **CARLOW: HA 12 -** R. Slaney: Rathvilly (S877823), 29 July 1981 and Motabower Bridge (S832778), Kilcarry Bridge (S893624) and Kildavin (S899597), 28 July 1981 (Hayes, 1991). R. Derreen, Acann Bridge (S900781), 29 July 1981 (Hayes, 1991). **CAVAN: HA 7 -** R. Barora tributary, Relaghbeg (N679907), 21 April 1968 (Murray, 1972)**: HA 36 -** R. Erne, Dingin's Bridge (N331948), 27 August 1982 (Hayes, 1991) and Carrigan (N391935), 27 August 1982 also Drumbarry (N462951), 17 August 1982 (Hayes, 1991). **CLARE: HA 28 -** R. Annageeragh, Moyglass Bridge, d/s L. Doo (R078725), 30 July 1982 (Hayes, 1991). R. Caher, Holywell, 2.5km from source (M173069), 27 October 1999 and 29 April 2000, CB (Kelly-Quinn *et al.*, 2003); R. Caher, Murroogh, 5km from source (M153089), 27 October 1999 and 29

April 2000, CB (Kelly-Quinn *et al.,* 2003). R. Creegh, Mountrivers Bridge, Doonbeg (Q991659) and R. Doonbeg, Derryard (Q979644), 30 July 1982 (Hayes, 1991). **CORK: HA 18** - R. Blackwater, Killavullen (W648998), 31 August 1981; Ballymacquirk Bridge, Banteer (W382989), Roskeen Bridge, Banteer (W444988) and Lombardstown (W463968), 1 September 1981; Knocknagree (W159975), Duncannon (W180931), Shamrock Bridge, Millstreet (W221935), Charles Bridge, Millstreet (W248943) and Keale Bridge, Millstreet (W294936), 2 September 1981 (all Hayes, 1991)**: HA 19** - Cruppoge stream, south east of Kilcorney (W367851), 16 April 2004, JRB (DAM)**: HA 20** - R. Bandon: Long Bridge, Dunmanway (W242631), 27 May 1980 to 17 January 1981; Bealabouy Bridge, Dunmanway (W257514), 20 February 1980 to 17 January 1981; u/s Ballineen (W331537), 18 April to 28 November 1980; Ballineen Bridge (W434538), 20 February to 28 November 1980; Castle Bernard (u/s Bandon) (W472546), 20 March 1980 to 17 January 1981 and 2.5km d/s Bandon (W516569), 20 February 1980 to 17 January 1981 (all Morgan, 1982). **DERRY: HA 1** - inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 23 March, 26 April and 10 May 2001 (PHL)**: HA 2** - all of the following HA 2 records are by Langton (2002): R. Ballykelly, Clagan (C628209), 9 June 2000. R. Owenbeg, Feeny picnic area, Feeny (C645058), 26 June 2000. R. Roe, Deerpark Wood, Limavaddy (C682203), 9 June 2000 and Largy Bridge, Limavaddy (C681202), 14 July 2000. R. Curly, Artikelly Bridge, Limavady (C684247), 9 June 2000. Fire dam Binevenagh Forest, Coleraine (C699304), 18 May 2000. Castle R., Ardmore Bridge, Limavady (C706207) and burn at Largantea picnic area, Formoyle, Coleraine (C738287), 9 June 2000**: HA 3** - Downhill beach stream, Coleraine (C754326), 20 March 1999 and 9 June 2000 (Langton, 2002). Downhill Lake, Downhill Forest, Coleraine (C757354), 24 March 2002 (PHL). Downhill Forest Stream, Coleraine (C759348), 17 March and 25 July 1999, 24 March 2002 (PHL). Inflow to Balinrees Reservoir, Coleraine (C793307), 9 June 2000 (Langton, 2002). R. Agivey, Glascort Bridge (C907226), 16 July 2000 (Langton, 2002); R. Agivey, Garvagh (C838154), 30 May 2002 (PHL); R. Agivey, ford at Ballynameen (C827148), 14 June 2008 (PHL). R. Aghadowey, Ballybritain Bridge (C859212) and R. Macosquin, Black Bridge, Ballylintagh (C854256), 26 May 2000 (Langton, 2002). R. Bann, Coleraine (C854304), 18 March to 19 November 1999, 1 January to 11 December 2000, 12 January to 30 June 2001, 6 January to 7 April and 22 September 2002, 16 and 23 January 2005, 11 April to 2 May 2010, 27 July to 24 August 2012. Coleraine (C855308), 16 March 2004 (PHL). R. Moyola, New Bridge, Magherafelt (H955905), 4 July 2000 (Langton, 2002) also 13 October 2000, 7 May 2001 and 8 October 2006 (PHL). **DONEGAL: HA 1** - R. Deele, Legland, Raphoe (C136028), 19 July 2000 (Langton, 2002)**: HA 37** - R. Eany, d/s Eanybeg confluence (G842815). R. Eanymore, Letterbara Bridge (G883825) and R. Eanymore, Drumagraa Bridge (G863822), 10 August 1982. R. Oily, Claggen (G751803), 8 August 1982. R. Stragar, Duninkeely (G727792), 10 August 1982 (all Hayes, 1991)**: HA 38** -

R. Gweedore, outflow from L. Anure, Crolly (B827184), 19 July 2000 (Langton, 2002). R. Owenveagh, Glenbeagh Cottage, GNP, Glenveagh (B990178), 30 July 1985 (Heneghan, 1986); R. Owenveagh, u/s L. Veagh, GNP, Glenveagh (C000187), September 1989 (Hernan, 1991). Stream on north west shore of L. Veagh (opposite Castle), GNP, Glenveagh (C013213), November 1989 (Hernan, 1991). Stream near Administration Centre, GNP, Glenveagh (C041227), 14 July 1986 (Heneghan, 1986). Owennacally stream, Glenveagh (C043226), 19 July 2000 and R. Owencarrow, d/s road bridge, Glenveagh (C043235), 18 July 2000 (Langton, 2002). L. Glen, Glen (C105292), 8 September 2009, EPA (DAM)**: HA 39 -** R. Glashagh, Drumbologe, Letterkenny (C096153), 18 July 2000 (Langton, 2002). R. Leannan, Kilnacrenan (C145200) and Drumaboden (C165218), 12 August 1982 also Claragh (C197210), 13 August 1982 (Hayes, 1991). R. Crana, Buncrana (C347328) and Ballymagan (C379344), 15 August 1982 (Hayes, 1991)**: HA 40 -** R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991). **DOWN: HA 3 -** Upper R. Bann tributary, Hilltown (at Church) (J210294), 27 March 1998 (PHL); Upper R. Bann, Katesbridge (J210407), 19 September 1997 and 26 March 1998 (PHL). Eel Burn at Shanrod House, Shanrod (J223477), 26 March 1998 (PHL). R. Kinnahalla, Hilltown (J239292), 26 September 1997 (PHL). Glenaveagh stream, Glenaveagh Bridge (J255284), 26 September 1997 (PHL). **DUBLIN: HA 9 -** R. Dodder: Bohernabreena aqueduct (O101208), 1 July 1968 (Murray, 1972); u/s reservoir, Bohernabreena (O109202) 23 February 1949 (Reilly, 1951); Fort Bridge, Bohernabreena (O009242), 28 March and 5 April 1949 (Reilly, 1951), 21 June 1966 (DAM) and 1 July 1968 (Murray, 1972); Firhouse (O104274) 18 November 1948 and 2 February 1949; Milltown (O168303) 18 November 1948; Ballsbridge (O180330), 15 December 1948; u/s Donnybrook Bridge (O177312), 1 November and 19 December 1948, 11 March, 27 May and 8 June 1949 and 7 February 1950 (all Reilly,1951). **FERMANAGH: HA 35 -** Glen R., Garrison (G943522), 29 June 2000 (Langton, 2002)**: HA 36 -** R. Finn, Lisnanesnagh Bridge (H544337), 26 June 2000 (Langton, 2002). R. Hollybrook, Lisnaskea (H373310), 27 June 2000 (Langton, 2002). R. Sruh Croppa, Cuilcagh Mountain (H111329), 29 June 2000 (Langton, 2002). R. Colebrook, Tattenbuddagh Bridge, Brookeborough (H458428), 4 June 1997 (PHL); R. Colebrook tributary, Ardmore, Breandrum (H377415), 15 September 1997 and 22 September 1998 (PHL); R. Colebrook tributary, Corlough (H416416), 27 June 1997 (PHL); R. Colebrook tributary, Scarford Bridge (H392441), 24 September 1998 (PHL). **GALWAY: HA 25 -** R. Woodford, bridge on R351, Woodford (M732000), 24 May 2003 (PHL)**: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 and R. Tirur, Newbridge (M492699), 16 August 1981 (Hayes, 1991)**: HA 30 -** L. Corrib, no data (M1545), 1980, BC (DAM). R. Loughkip, Ballyquirk, Moycullen (M224313), 17 August 1981 and R. Grange, Grange Bridge (M428498), 16 August 1981 (Hayes, 1991)**: HA 31 -** L. Derryclare, Recess (L825485), 16 July 2007, EPA (DAM). R. Owentouey, Tullywee Bridge,

Recess (L873474), 18 August 1981 (Hayes, 1991)**: HA 32 -** R. Owenglin, Clifden (L677506) and R. Dawros, Tullywee Bridge, Letterfrack (L730586), 18 August 1981 (Hayes, 1991). **KERRY: HA 18 -** R. Blackwater, Lacknastooka (R153008), 2 September 1981 (Hayes, 1991)**: HA 21 -** L. Brin, Derreeny (V780775), 10 September 2008, EPA (DAM). R. Inny, Scarriff Bridge (V504696), 24 August 1983 (Hayes, 1991)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Caragh, Upper Brida Valley (V785810), Lower Brida Valley (V740805), d/s Owenroe R. confluence (V720815), Bealalaw Bridge (V715832), Blackstones Bridge, d/s R. Acoose confluence (V710864) and outflow from L. Caragh (V713924), 1975, CD (all Dowling *et al.*, 1981). R. Clydagh: Caherbarnagh (W202842) u/s Clydagh Bridge (W114826) and Knocknagowan (W187837), April 1978 to March 1979 (Ashe, 1982). R. Flesk: d/s Clydagh/Loo confluence (W084814), Garries Bridge (W082835), Flesk Bridge (W034876), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), April 1978 to March 1979 (Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), April 1978 to March 1979 (Ashe, 1982). R. Torc above waterfall, Torc Mountain, Killarney (V959830), March 1972 (Douglas and Murray, 1980). **KILDARE: HA 7 -** R. Boyne, Edenderry (N636346) and Ballyboggan (N639402), 9 July 1981 (Hayes, 1991)**: HA 9 -** R. Liffey, Sallins (N881245), 17 July 1983 and Straffan Bridge (N924293), 15 July 1983 (Hayes, 1991). **KILKENNY: HA 15 -** R. Nore, Threecastles (S458626), 27 August 1981 and Ballyragget (S445707), Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (Hayes, 1991). **LAOIS: HA 15 -** R. Nore, Castletown Bridge (S326930), Kilbricken (S362898), Shanahoe Bridge (S407858) and u/s Durrow (S416787), 27 August 1981 also R. Nore, Athanagh (S423763), 28 August 1981 (Hayes, 1991). **LEITRIM: HA 35 -** L. Glencar, Glencar (G757435), 2 September 2008, EPA (DAM). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514), d/s Cappamore (R779504) and Dromkeen Bridge (R741480), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** L. Doo, Delphi, north east shore (L834686), 22 September 2008, EPA (DAM). Nahaltora stream, road bridge d/s L. Nahaltora, Derrygarve, Cregganbaun (L784744), 6 June 2004, DAM/WM (DAM)**: HA 32 -** R. Burleemslough, Clapper Bridge Ford (u/s Roonagh L.), Killeen, Cloonlaur (L754759), 5 August 2004, DAM/WM (DAM). R. Bunowen, u/s of bridge, Louisburg (L807807), 30 September 2004, DAM/WM (DAM). L. Fin, Delphi (L841657), 19 May 2005, CB (DAM) and 5 April and 11 September 2006, EPA (DAM). R. Owengarve, Rosgalliv Bridge, Mulranny (L886962), 4 August 2004, DAM/WM (DAM). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). R. Owenwee, u/s Aghamore Bridge, Westport (L972817), 5 August 2004 and Belclare Bridge, Westport (L959822), 30 September 2004, DAM/WM (DAM). Stream at "Archeological site 9", coastal, Murrisk (L908825), 7 May 2004, DAM/WM (DAM). R. Erriff, Ashleigh Falls (L895645), 18 August 1981 (Hayes, 1991). Westport L., Westport Woods Hotel,

Westport (L985843), 30 September 2004, DAM/WM (DAM)**: HA 33 -** Bolinglanna Stream, Achill mainland (L756926), stream at Sraheens Bridge, Achill Island (L718983) 6 May 2004 (Murray, 2005). Stream at Pollranny Sweeney, Achill mainland (L755997), 6 May 2004, DAM/WM (DAM). R. Owenmore, Bangor Erris (F863228), 18 August 1983 and R. Glenlassra, Belderg (G023407), 19 August 1983 (Hayes, 1991)**: HA 34 -** R. Moy, Cloongullaun (G348016), 30 August 1982 and Ballylahan (M227992), 29 August 1982 (Hayes, 1991). **MEATH: HA 6 -** R. Dee, Drumconrath (N910894), 27 July 1983 (Hayes, 1991)**: HA 7 -** R. Mongagh, Castlejordan (N590389), June 1989 (Murray and Lynch, 1991). R. Boyne, Scarrif Bridge (N733527) and Newtown, Trim (N815571), 9 July 1981 (Hayes, 1991), Bellinter Bridge (N894625), 21 August 1988 (Murray, 1988) and 11 August 1999, DAM/WM (DAM), Ardsallagh, at St Bridget's Well (N897635), 7 July 1988 (Murray, 1988), Kilcarn Bridge, Navan (N884657), 21 August 1988 (Murray, 1988), New Bridge, Navan (N873679), 18 August 1988 (Murray, 1988), Stackallen Bridge (N918713), 12 July 1981 (Hayes, 1991) and 19 July 1989 (DAM), Slane Bridge (N965737), Knowth Weir (N995720), Oldbridge (O045761) and d/s Oldbridge (O062753), 19 July 1989 (DAM). R. Blackwater, Bloomsbury Bridge, Oristown (N793741) and Donaghpatrick (N819723), 19 August 1988 also Poolboy Bridge, Navan (N871681), 18 August 1988 (Murray, 1988). Yellow R., tributary to R. Blackwater, Randalstown, Navan (N835710), 5 May 1995, LF/DAM (Finnegan, 1998)**: HA 8 -** R. Nanny, road bridge u/s Duleek (O035655) and road bridge at Duleek (O050683) also R. Nanny tributary, Boolies, Duleek (O044654), 6 June 2006, DAM/WM (DAM)**: HA 7 -** Yellow R., tributary to R. Boyne, Sheep Bridge (N582387), June 1989 (Murray and Lynch, 1991). **OFFALY: HA 25 -** R. Little Brosna, Ryan's Cross Bridge (S053882), Milltown Park (S068907), Brosna Bridge (S077938), Sharavogue (S056953) and New Bridge (N016088), 2 September 1982 also R. Brosna, Cloghan (M046209), 2 September 1982 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck: Castlecoote (M809627) and Ballyforan (M817464), 16 July 1981; Athleague (M825758), Ballynoe (M693757) and Mount Talbot (M813531), 14 August 1981; Newtown (M844346), 15 August 1981 (all Hayes, 1991). R. Lung, Lung Old Bridge, Tibohine (M652928), 15 June 1999 (DAM)**: HA 30 -** R. Dalgan, Clonfad (M518712), 20 August 1981 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Carrowneden (G530205), Cloonacool (G493168), Metal Bridge, Tobercurry (G464138), and Annagh (G466123), 30 August 1982 (Hayes, 1991)**: HA 35 -** R. Drumcliff, Glencar (G734430), 19 August 1983 (Hayes, 1991). **TIPPERARY: HA 15 -** R. Nore, Clonakenny (S116805), Nore Bridge (S133816) and Quaker Bridge (S211868), 27 August 1981 (Hayes, 1991)**: HA 16 -** Black R., Two-Mile-Boris (S192578), Breagagh R., Archerstown Bridge (S140568) and R. Drish, Boolabeha Bridge (S190619), 22 May 1992 (Murray and Lynch, 1992). Brownstown R., Kilclonagh (S167655) and R. Clover (Clover R.), Twomileborris (S199590), 6 July 1992

(Murray and Lynch, 1992). R. Suir, d/s Thurles (S128581), 22 May 1992 and Rossestown Bridge (S134624), 6 July 1992 (Murray and Lynch, 1992)**: HA 25 -** R. Kilmastulla, Kilmastulla Bridge (R728698), 3 September 1981 (Hayes, 1991). **TYRONE: HA 1 -** Dennet Stream, Essbeg Bridge, Lisnaskee (H384306), 27 June 2000 (Langton, 2002)**: HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002). **WATERFORD: HA 18 -** R. Blackwater, Ballyduff (W964992) and Lismore (X047988), 31 August 1981 (Hayes, 1991). **WESTMEATH: HA 25 -** R. Brosna, 25m below fish farm, Cullion (N431556) and 200m below fish farm, Cullion (N432556), May 1990 (Murray, 1990). **WEXFORD: HA 11 -** R. Ounvarra, Ballycanew (T153519), 6 May 2006, DAM/WM (DAM)**: HA 12 -** R. Boro, Dunamore Bridge, Enniscorthy (S963366), R. Slaney, Clomahon (S933534), R. Slaney, Ballycarney (S967488) and R. Slaney, Edernline Bridge (S977345), 29 July 1981 (all Hayes, 1991). R. Sow tributary, Garylough Mill, Screen (T076302), 6 May 2006, DAM/WM (DAM)**: HA 13 -** R. Corrock tributary, Goff's Bridge, Horetown (S870185), 12 June 2012 (DAM). R. Tintern, Tintern Abbey (S792100) and Tintern estuary bridge (S794099), 13 June 2012 (DAM). **WICKLOW: HA 10 -** R. Glencullen tributary, Glendoo (O160212), R. Glencullen, Brockey (O169207), u/s Glencullen Bridge (O190195), d/s Glencullen Bridge (O195193) and Enniskerry Bridge (O227173), 1970, KC (all Clabby and Bracken, 1976); R. Glencullen, Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989). R. Glenealo, Glendalough, WMNP (T090962) and outflow from Upper Glendalough Lake, WMNP (T109964), 16 July 1996, EME/DAM (McEntee, 1997). R. Pollnass, above waterfall, WMNP, Glendalough (T112958), 16 July 1996 (DAM). R. Avonbeg: Drumgoft Bridge, Glenmalure, (T105905), 4 August 1983 (Hayes, 1991) and Meetings Bridge (T188831), 11 July and 27 October 1997 (Curran, 2001). R. Avonmore, Castlehoward (T190833), 4 August 1983 (Hayes, 1991) and Lion Arch Bridge (T194833), 11 July and 27 October 1997 (Curran, 2001). R. Avoca: Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991) also 11 July and 27 October 1997 (Curran, 2001); R. Avoca, Avoca Village (T203802), 11 July 1997 (Curran and Murray, 2001) and 27 October 1997 (Curran, 2001)**: HA 12 -** R. Derry, Balisland (S978645), 28 July 1981 and Bridgeland (T021744), 29 July 1981 (Hayes, 1991). R. Slaney, Knockgarrigan, Glen of Imail (S936937), Stratford Bridge (S895930) and Kilmurray (S889856), 28 July 1981 (Hayes, 1991).

***Tvetenia discoloripes* (Goetghebuer and Thienemann, 1936)**

ANTRIM: HA 4 - R. Bush, Conogher Bridge (C963305), 10 September 2000 (Langton, 2002)**: HA 5 -** R. Ravernet, Baileysmill, Hillsborough (J324587), 22 June 2000 (Langton, 2002). **ARMAGH: HA 3 -** Upper R. Bann tributary, Cappagh (J156425), 25 May 1997 (PHL). **CAVAN: HA 36 -** L. Macnean, lower, Blacklion (H106378), 7 June 2007, EPA (DAM). R. Erne, Drumbarry (N462951), 17 August 1982 (Hayes, 1991). **CORK: HA 20 -** R. Bandon:

Long Bridge, Dunmanway (W242631), 20 February 1980 to 17 January 1981; Bealabouy Bridge, Dunmanway (W257514), 20 February 1980 to 17 January 1981; u/s Ballineen (W331537), 20 February to 28 November 1980; Ballineen Bridge (W434538), 20 March to 31 October 1980; Castle Bernard (u/s Bandon) (W472546), 20 March to 17 January 1981; 2.5km d/s Bandon (W516569), 20 February 1980 to 17 January 1981 (all Morgan, 1982). **DERRY: HA 2 -** R. Roe, Largy Bridge, Limavaddy (C681202), 14 July 2000 (Langton, 2002). R. Curly, Artikelly Bridge, Limavady (C684247), 9 June 2000 and R. Castle, Ardmore Bridge, Limavady (C706207), 9 June 2000 (all Langton, 2002)**: HA 3 -** Downhill beach stream, Coleraine (C754326), 9 June 2000. R. Aghadowey, Ballybritain Bridge (C859212), 26 May 2000 and R. Macosquin, Black Bridge, Ballylintagh (C854256), 26 May 2000 (all Langton, 2002). R. Bann, Coleraine (C854304), 29 March to 7 September 1999, 1 January to 16 July 2000, 26 April, 16 and 30 June 2001, 11 April 2010, 10 and 24 August 2012. Coleraine (C858304), 24 March 2004 (all PHL). **DONEGAL: HA 1 -** R. Deele, Legland, Raphoe (C136028), 19 July 2000 (Langton, 2002)**: HA 3 -** Upper R. Bann tributary, Tullyconnaught (J166451), 6 June and 19 September 1997 also 27 August 1998; Upper R. Bann tributary, Glebe Bog, Glebe (J164417), 19 March 1998 (PHL); Upper R. Bann, Banbridge (J168443), 29 May 1997 (PHL); Upper R. Bann tributary, Poland's Bridge, Banbridge (J193428), 29 May 1997 and 26 March 1998 (PHL); Upper R. Bann tributary, Killinamurry (J228441), 19 September 1997 (PHL). Eel Burn, Shanrod (J223477), 14 August 1998 (PHL). R. Muddock, Muddock Bridge, Rathfriland (J235342), 19 September 1997 (PHL). **FERMANAGH: HA 35 -** Glen R., Garrison (G943522), 29 June 2000 (Langton, 2002)**: HA 36 -** R. Finn, Lisnanesnagh Bridge (H544337), 26 June 2000 and R. Hollybrook, Lisnaskea (H373310), 27 June 2000 (Langton, 2002). **GALWAY: HA 26 -** R. Shiven, d/s Ballinaglass (M788494), 29 July 1981 (Hayes, 1991)**: HA 30 -** L. Corrib, no data (M1545), 1980, BC (DAM). **KERRY: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Caragh, Upper Brida Valley (V785810), Lower Brida Valley (V740805), d/s Owenroe R. confluence (V720815) and Blackstones Bridge, d/s R. Acoose confluence (V710864), 1975, CD (all Dowling *et al.*, 1981). **KILDARE: HA 9 -** R. Liffey, Sallins (N881245), 17 July 1983 (Hayes, 1991). **KILKENNY: HA 15 -** R. Clogh, Clogh (S565790), 10 March 1976, CD (DAM). **LONGFORD: HA 26 -** R. Camlin, Mullagh Bridge, d/s Longford (N116760), June 1965; R. Camlin tributary, Longford Racecourse (N149767), April and June 1965 (all Murray, 1965). **MAYO: HA 32 -** R. Bunowen, Louisburg, u/s of bridge (L807807), 30 September 2004, DAM/WM (DAM). **MEATH: HA 6 -** R. Dee, Drumconrath (N910894), 27 July 1983 (Hayes, 1991)**: HA 7 -** R. Boyne: Stackallen Bridge (N918713), 12 July 1981 (Hayes, 1991) and 19 July 1989 (DAM); Knowth Weir (N995720), 19 July 1989 (DAM)**: HA 8 -** stream-pond, Meadesbrook, Kilmoon (O038594), 4 April and 16 August 1982, 10 August 1999, 9 June 2006, 10 November and 12 December 2012 (DAM).

OFFALY: HA 7 - Yellow R., tributary to R. Boyne, Garr Bridge (N532370), June 1989 (Murray and Lynch, 1991). **TIPPERARY: HA 16 -** R. Breagagh, Archerstown Bridge (S140568), 6 July 1992; R. Clover, Twomileborris (S199590), 22 May 1992; R. Drish, Castletown (S207634), 6 July 1992 and Boolabeha Bridge (S190619), 6 September 1991; R. Suir, Loughmore (S120670), 6 July 1992, Rossestown Bridge (S134624), 6 July 1992 and d/s Thurles (S128581), 22 May 1992 (all Murray and Lynch, 1992). **WEXFORD: HA 12 -** R. Sow tributary, Garylough Mill, Screen (T076302), 6 May 2006, DAM/WM (DAM). **WICKLOW: HA 10 -** R. Glencullen, u/s Glencullen Bridge (O195193), Knocksink (O217182) and Enniskerry Bridge (O227173), 1970, KC (Clabby and Bracken, 1976) also Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989). R. Avonbeg, Meetings Bridge (T188831), R. Avonmore, Lion Arch Bridge (T194833) and R. Avoca, Whitebridge, Tigroney (T198821), 11 July and 27 October 1997 (Curran, 2001); R. Avoca, Avoca Village (T203802), 11 July 1997 (Curran and Murray, 2001) and 27 October 1997 (Curran, 2001).

***Tvetenia verralli* (Edwards, 1929)**

ANTRIM: HA 4 - R. Brymore (Brymore Water), Brymore Bridge (D162275), R. Glendun, Drumfresky, Cushendun (D193308), 2 July 2000 (Langton, 2002). R. Glenaan, Cushendall (D218288) and R. Glenarm, Glenarm (D310148), 17 September 2011 (PHL). **CARLOW: HA 12 -** R. Slaney, Motabower Bridge (S832778), Kilcarry Bridge (S893624) and Kildavin (S899597), 28 July 1981; R. Derreen, Acann Bridge (S900781), 29 July 1981 (all Hayes, 1991). **CLARE: HA 25 -** L. Derg, Mountshannon (R718861) and d/s Killaloe (M705715), 18 September 2009, EPA (DAM)**: HA 28 -** R. Doonbeg, Derryard (Q979644), 30 July 1982 (Hayes, 1991). **CORK: HA 18 -** R. Blackwater: Ballymacquirk Bridge, Banteer (W382989) and Roskeen Bridge, Banteer (W444988), 1 September 1981; Duncannon (W180931), Shamrock Bridge, Millstreet (W221935), Charles Bridge, Millstreet (W248943) and Keale Bridge, Millstreet (W294936), 2 September 1981 (all Hayes, 1991)**: HA 19 -** L. Allua, Ballingeary (W180652), 4 April 2008, EPA (DAM)**: HA 20 -** R. Bandon, 2.5km d/s Bandon (W516569), 20 February and 22 December 1980 (Morgan, 1982). R. Ilen, Drimoleague (W098454) and Madore (W103419), 24 August 1983 (Hayes, 1991). **DERRY: HA 2 -** R. Roe, Largy Bridge, Limavaddy (C681202), 8 September 2006 (PHL). R. Castle, Ardmore Bridge, Limavady (C706207), 9 June 2000 (Langton, 2002)**: HA 3 -** Downhill beach stream, Coleraine (C754326), 9 June 2000 (Langton, 2002); Downhill Forest stream, Coleraine (C759348), 25 July 1999 (PHL). Balinrees Reservoir, Coleraine (C794300), 20 March 1999 (PHL). R. Agivey, Glascort Bridge (C907226), 16 July 2000 (Langton, 2002); R. Agivey, Garvagh (C838154), 30 May 2002 and Ford at Ballynameen (C827148), 14 June 2008 (PHL). R. Bann, Coleraine (C854304), 18 March to 1 October 1999, 1 January to 16 July 2000, 26 April, 16 and 30 June 2001, 22

September 2002, 16 and 23 January 2005, 11 and 18 April to 2 May 2010, 27 July to 24 August 2012 (all PHL). R. Moyola, New Bridge, Magherafelt (H955905), 4 July and 13 October 2000 (Langton, 2002). **DONEGAL: HA 37 -** the following HA 37 records are by Hayes (1991): R. Oily, Claggen (G751803), 8 August 1982; R. Eany, d/s Eanybeg confluence (G842815), R. Eanymore, Letterbara Bridge (G883825) and Drumagraa Bridge (G863822) and R. Stragar, Duninkeely (G727792), all 10 August 1982 (Hayes, 1991)**: HA 38 -** R. Tullaghobeg, Falcarragh (B925319) and Millmount (B933304), 12 August 1982 (Hayes, 1991). R. Devlin, Dunlewy (B927190), 19 July 2000 (Langton, 2002). Owennacally stream, Glenveagh (C043226), 19 July 2000 (Langton, 2002). R. Owencarrow, d/s road bridge, Glenveagh (C043235), 18 July 2000 (Langton, 2002). R. Ray, Crocnalaragh (B989272), 12 August 1982 (Hayes, 1991)**: HA 39 -** R. Glashagh, Drumbologe, Letterkenny (C096153) and R. Swilly, Newmills, Letterkenny (C125092), 18 July 2000 (Langton, 2002). R. Leannan, Kilnacrenan (C145200) and Drumaboden (C165218), 12 August 1982 also at Claragh (C197210), 13 August 1982 (Hayes, 1991). R. Crana, Buncrana (C347328) and Ballymagan (C379344), 15 August 1982 (Hayes, 1991)**: HA 40 -** R. Keenagh, Hugh Roe's Bridge, Umgall (C454543), 16 August 1982 (Hayes, 1991). **DOWN: HA 3 -** R. Leitrim, Leitrim Bridge, Hilltown (J217285), 13 August 1999 (PHL). **FERMANAGH: HA 35 -** Glen R., Garrison (G943522), 29 June 2000 (Langton, 2002)**: HA 36 -** R. Sruh Croppa, Cuilcagh Mountain (H111329), 29 June 2000 (Langton, 2002). R. Bannagh, Drummoney Falls, Pettigo (H168676), 17 August 2011 (PHL). **GALWAY: HA 30 -** stream at N59 lay-by site, Moycullen (M204326), 25 May 2003 (PHL). R. Loughkip, Ballyquirk, Moycullen (M224313), 17 August 1981 (Hayes, 1991). R. Grange, Grange Bridge (M428498), 16 August 1981 (Hayes, 1991). R. Owenriff, Oughterard (M112426), 25 May 2003 (PHL)**: HA 31 -** L. Ahalia, Maam Cross (L971402), 23 September 2009, EPA (DAM). R. Owentouey, Tullywee Bridge, Recess (L873474), 18 August 1981 (Hayes, 1991)**: HA 32 -** R. Dawros, Tullywee Bridge, Letterfrack (L730586) and R. Owenglin, Clifden (L677506), 18 August 1981 (Hayes, 1991). L. Tully, Tully Cross (L695618), 10 September 2007, EPA (DAM). **KERRY: HA 21 -** L. Brin, Derreeny (V780775), 10 September 2008, EPA (DAM)**: HA 22 -** R. Annascaul, Annascaul (Q593017), 2 July 1981 (Hayes, 1991). R. Clydagh: Caherbarnagh (W202842), u/s Clydagh Bridge (W114826) and Knocknagowan (W187837), April 1978 to March 1979 (Ashe, 1982). R. Flesk, d/s Clydagh/Loo confluence (W084814), Garries Bridge (W082835), Flesk Bridge (W034876), d/s Whitebridge (V987900), d/s New Bridge (V963885) and u/s L. Leane (V964894), April 1978 to March 1979 (Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), April 1978 to March 1979 (Ashe, 1982). **KILKENNY: HA 15 -** R. Nore, Threecastles (S458626), 27 August 1981; Norelands Bridge (S547436) and Brownsbarn Bridge (S618391), 28 August 1981 (all Hayes, 1991). R. Clogh, Clogh Bridge (S565790), 10 March 1976, CD (DAM). **LEITRIM: HA 35 -** L. Belhavel,

Killarga, Dromahair (G878288), 2 April and 26 August 2008, EPA (DAM). **LIMERICK: HA 25 -** R. Mulkear, Cappamore (R775514) and d/s Cappamore (R779504), 8 September 1981 (Hayes, 1991). **MAYO: HA 32 -** Nahaltora stream, road bridge d/s L. Nahaltora, Derrygarve, Cregganbaun (L784744), 6 June 2004, DAM/WM (DAM). R. Altahoney, Newport (F950050), 1968-1971, EF (Fahy and Murray, 1972). R. Owenwee: u/s Aghamore Bridge, Westport (L972817), 5 August 2004 and Belclare Bridge, Westport (L959822), 30 September 2004, DAM/WM (DAM). Stream at "Archeological site 9", Murrisk (L908824), 7 May 2004 (Murray, 2005). R. Erriff, Ashleigh Falls (L895645), 18 August 1981 (Hayes, 1991)**: HA 34 -** R. Moy, Cloongullaun (G348016), 30 August 1982 (Hayes, 1991). **MEATH: HA 6 -** R. Dee, Drumconrath (N910894), 27 July 1983 (Hayes, 1991)**: HA 7 -** R. Boyne, Ardsallagh, at St Bridget's Well (N897635), 7 July 1988 and Kilcarn Bridge, Navan (N884657), 21 August 1988 (Murray, 1988). R. Blackwater, Poolboy Bridge, Navan (N871681), 18 August 1988 (Murray, 1988)**: HA 25 -** R. Shannon, Shannon Bridge (M967254), 15 August 1981 (Hayes, 1991). **ROSCOMMON: HA 26 -** R. Suck, Castlecoote (M809627) and Ballyforan (M817464), 16 July 1981; Athleague (M825758) and Mount Talbot (M813531), 14 August 1981 (all Hayes, 1991) also Newtown (M844346), 15 August 1981 (Hayes, 1991). **SLIGO: HA 34 -** R. Moy, Cloonacool (G493168), 30 August 1982 (Hayes, 1991)**: HA 35 -** L.Gill (G753335), 3 April 2008, EPA (DAM). R. Drumcliff, Glencar (G734430), 19 August 1983 (Hayes, 1991). **TIPPERARY: HA 15 -** R. Nore, Clonakenny (S116805) and Nore Bridge (S133816), 27 August 1981 (Hayes, 1991)**: HA 16 -** R. Suir, Rossestown Bridge (S134624), 6 July 1992 (Murray and Lynch, 1992). **TYRONE: HA 1 -** Dennet Stream, Essbeg Bridge, Lisnaskee (H384306), 27 June 2000 (Langton, 2002). **WATERFORD: HA 18 -** R. Blackwater, Lismore (X047988), 31 August 1981 (Hayes, 1991). **WEXFORD: HA 11 -** R. Ounvarra, Ballycanew (T153519), 6 May 2006, DAM/WM (DAM). R. Bannr, Coolgreany (T128713), 7 April 2004, JRB (DAM). R. Slaney, Clomahon (S933534), Ballycarney (S967488) and Edernline Bridge (S977345), 29 July 1981 (Hayes, 1991). **WICKLOW: HA 10 -** Glencullen R., Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989). R. Avonbeg, Drumgoft Bridge, Glenmalure, (T105905), 4 August 1983 (Hayes, 1991). R. Avonmore, Castlehoward (T190833) and R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991)**: HA 12 -** R. Derry, Bridgeland (T021744), 29 July 1981 (Hayes, 1991). R. Slaney, Knickeen, Glen of Imail (S987948), Stratford Bridge (S895930) and Kilmurray (S889856), 28 July 1981 (Hayes, 1991).

***Zalutschia humphriesiae* Dowling and Murray, 1980**

CLARE: HA 27 - L. Muckanagh, Tubber, Corrofin (R368926), 3 April 2006, EPA (EPA). **DUBLIN: HA 9 -** bog pool, Featherbed (O120190) [Holotype: 18 April 1974], from February to April and June 1974, CD (Dowling, 1975; Dowling and Murray, 1980, 1981; Murray, 2005).

GALWAY: HA 30 - L. Beaghcauneen, Ballinaboy (L679470), 5 April 2007, EPA (DAM)**: HA 31 -** L. Loughanaure, Kilkieran (L828320), 16 April 2007, EPA (DAM). **KERRY: HA 22 -** R. Caragh, Lower Brida Valley (V740805), 1975, CD (Dowling and Murray, 1980, 1981; Dowling *et al.*, 1981). **LEITRIM: HA 35 -** L. Lackagh, Boleybrack (G920320), 21 April 2005, JRB (DAM). **MAYO: HA 33 -** bog pools, Glenamoy (F896345), February, April and June 1973, CD (Dowling, 1975; Dowling and Murray, 1980, 1981)**: HA 34 -** bog pond, Bellacorrick (F975198), 10 March 2005, DAM/WM (DAM).

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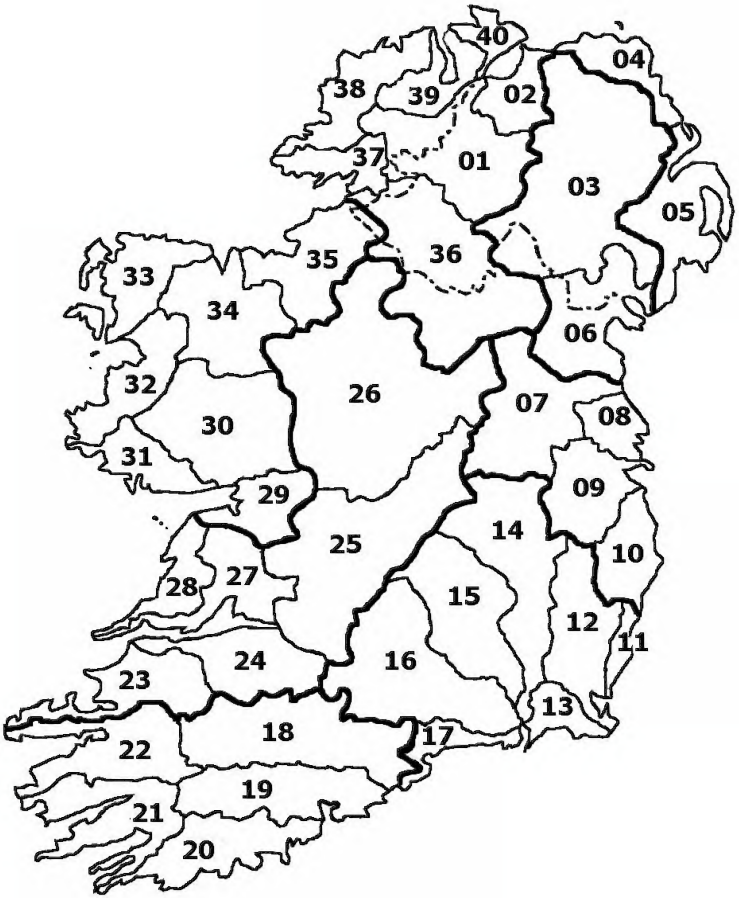
FIGURE 1. The counties of Ireland.

FIGURE 2. The forty hydrometric areas of Ireland. Heavy lines illustrate demarcations of designated River Basin Districts (Water Resource Regions) consisting of hydrometric areas as follows: **North Western** - HA 01, 02, 36, 37, 38, 39, 40. **Neagh-Bann** - HA 03 and 06. **North Eastern** - HA 04 and 05. **Eastern** - HA 07, 08, 09, 10. **South Eastern** - HA 11, 12, 13, 14, 15, 16, 17. **South Western** - HA 18, 19, 20, 21, 22. **Shannon** - HA 23, 24, 25, 26, 27, 28. **Western** - HA 29, 30, 31, 32, 33, 34, 35. Dashed line indicates the international boundary.



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FIRST RECORDS OF HALOPHILIC CHIRONOMIDAE (DIPTERA) FROM LANZAROTE INCLUDING *CLUNIO MARINUS* HALIDAY (ORTHOCLADIINAE) NEW TO THE CANARY ISLANDS

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Abstract

Four halophilic species of Chironomidae are recorded from Lanzarote, Canary Islands. *Clunio marinus* is a new record for the Canary Islands and *Halocladius millenarius*, *Thalassosmittia atlantica* and *Thalassomya frauenfeldi* are reported from Lanzarote for the first time.

Key words: Chironomidae, Canary Islands, Lanzarote, Telmatogetoninae, Orthocladiinae, *Clunio marinus*, distribution

Introduction

Early records of Chironomidae from the Macaronesian Canary Islands, located approximately 300km west of Morocco around a latitude of 29°N, were given by Becker (1908), Santos Abreu (1918) and Storå (1936) from the islands of La Palma, Tenerife and El Hiero. Cranston and Armitage (1988) reviewed and updated nomenclature from available type material from the collections of Becker and Santos Abreu. Armitage *et al.* (1995) provided additional records, based mostly on larval material, from Tenerife while Langton and Orendt (1996) provided records based on pupal exuviae from La Gomera. The Fauna Europaea database documents some 58 species of Chironomidae from the Canary Islands Archipelago (Sæther and Spies, 2011). An inventory of plant and animal species, coordinated by the Government of the Canary Islands in 2009 (Arechavaleta *et al.*, 2010), provides records of 60 chironomid taxa compiled by Báez and Oromí (2010) from the islands of El Hiero (2 species), La Palma (23 species), La Gomera (12 species), Tenerife (33 species including 2 questionable records) and Gran Canaria (31 species). To date there are no records from the islands of Fuerteventura or Lanzarote. While visiting Lanzarote in March 2014, swarms of adult Chironomidae were observed and collected along the rocky shoreline at Costa Teguise, approximately 8km north-east of Arrecife. Collections from these swarms and of drowned adult specimens and pupal exuviae from the water surface of marine rock pools yielded a total of four species documented here as the first records of Chironomidae from Lanzarote.

Methods and collection sites

Collections were taken from coastal rock pools on 17 March 2014 along the Costa Teguise sea shore, Lanzarote, between Playa de los Charcos and Playa de las Cucharas. Adults were collected by net in flight or in surface skim samples from rock pools which also contained some pupal exuviae. All specimens obtained were preserved in 75% alcohol. Identification followed slide mounting using Euparal as mountant. Information on previous records from the Canary Islands is derived from Báez and Oromí (2010).

New records for the Canary Islands

Subfamily Telmatogetoninae

***Thalassomya frauenfeldi* Schiner, 1856**

Previous records: La Palma. **New to Lanzarote.**

A fragmented adult (antennae and abdomen missing), collected from the water surface of a rock pool at Playa de las Cucharas, was readily identified from Cranston (1989) by the characteristic wing structure and numerous strong thoracic acrostichal setae. Described by Schiner (1856) from the Mediterranean coastline near Trieste, Italy, the first record from the Atlantic Ocean was by Wollaston (1858) who described it new to science as "*Cheironomus*" *pedestris* from the Macaronesian islands of Porto Santo and Deserta Grande in the Madeiran archipelago. Santos Abreu (1918) provided the first record from the Canarian archipelago, as *Scopelodromus canariensis*, from specimens collected on La Palma Island at Santa Cruz de la Palma. The species is also known from coastal areas of Madeira (Murray and Hughes, 2000) and the Azores (Murray *et al*., 2004).

Subfamily Orthocladiinae

***Clunio marinus* Haliday, 1855**

Previous records: None. **New to the Canary Islands.**

A skim sample from a rock pool at las Chucarcas yielded an intact adult male which is the first record of *Clunio marinus* from Lanzarote and the Canary Islands. The species was first reported from Macaronesia by Murray and Hughes (2000) from the coast of Madeira.

***Halocladius* (*Halocladius*) *millenarius* (Santos Abreu, 1918)**

Previous records: La Palma, La Gomera, Gran Canaria. **New to Lanzarote.**

Three adult females taken in a skim sample from a rock pool at las Chucarcas were identified from Hirvenoja (1973) as *H. stagnorum* Goetghebuer (1937) which was designated a synonym of *H. millenarius* by Cranston and Armitage (1988). Santos Abreu (1918) described this species from the Canary Islands as *Paratrichocladius millenarius* and also recognised five varieties - var. *furtivus,* var. *pallidicollis*, var. *flaviventris*, var. *exilis* and var. *litorosus* - all collected from the sea surface at sites on La Palma Island. These five varieties were synonymized with *H.*

millenarius by Ashe and O'Connor (2012). An additional three species described by Santos Abreu from La Palma - *P. formosus, P. pulchrigaster* and *P. sororians* were previously synonymized with *H. millenarius* by Cranston and Armitage (1988).

***Thalassosmittia atlantica* (Storå, 1936)**

Previous records: El Hierro, Tenerife, Gran Canaria. **New to Lanzarote.**

Adult males and females were obtained swarming above and between rocks along the promontory shoreline at Playa de los Charcos. Storå (1936) described *Eukiefferiella atlantica* from specimens collected on Tenerife and El Hiero as well as a sub species *E. grancanariensis* collected on Gran Canaria which Ashe and O'Connor (2012) treat as a questionable synonym of *E. atlantica.* The species was transferred to *Thalassosmittia* by Armitage and Tuiskunen (1988). Other Macaronesian records are known from Madeira (Murray and Hughes, 2000) and the Azores (Storå, 1945; Murray *et al*., 2004).

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SIKA-LIKE DEER *CERVUS NIPPON* TEMMINCK, 1838 OBSERVED SWIMMING OUT TO SEA AT GREYSTONES, CO. WICKLOW: INCREASING DEER POPULATION PRESSURE?

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Abstract

During September 2011, an adult-size sika-like deer doe *Cervus nippon* Temminck, 1838 was observed swimming out to sea near Greystones, Co. Wicklow, off the east coast of Ireland (Irish Sea). It is hypothesised that this unusual behaviour may be inherently related to a phenomenal increase in deer distribution, abundance and density in Ireland over the last three decades.

Based on census data from 2009, the estimated mean density of all deer species in the Republic of Ireland was 0.04/ha total land area (county range: 0.003-0.65) and 0.4/ha forestry (county range: 0.02-3.68). Significantly, Co. Wicklow accounted for the highest densities of all deer species, 3.7/ha forestry and 0.65/ha total land area, including the highest densities of sika deer (3.1/ha forestry and 0.55/ha total land area) and hybrid deer (0.3/ha forestry and 0.05/ha total land area).

Previous observations on swimming deer are reviewed. It was concluded that deer are capable of swimming over relatively long distances. It is hypothesised that in some situations swimming may have facilitated the colonisation of new land masses by deer.

Key words: swimming deer, deer population pressure, deer densities, sika deer, Ireland

Introduction

Between 5.30 and 6.00pm on 4 September 2011, one of us (SM) observed an adult-sized sika-like doe *Cervus nippon* Temminck, 1838 barrelling down towards the south beach near Greystones (53.144^{0}N, 6.072^{0}W), Co. Wicklow, on the east coast of Ireland (Irish Sea). The deer was initially observed making its way along the edge of a coastal golf driving range before dropping down one side of a railway embankment, leaping over the railway tracks, scrambling up the opposite embankment and out across the strand at full speed towards the water's edge where without any hesitation it splashed into the waves and began swimming directly out to sea, its head and a good part of its neck held stiffly up out of the water. Over the next 45 minutes, the deer was observed with binoculars, albeit with decreasing resolution, until it eventually

disappeared from view. Two hours later, there was still no sign of the deer returning to shore either at or near the location where it originally entered the sea. Although the deer may have made landfall at another location, its ultimate fate is unknown.

What prompted this sika-like deer to leave the seclusion and relative protection afforded by its usual forest habitat, stray into a densely human populated urban area, and swim out to sea? Perhaps it was inherently due to the effects of a rapidly expanding deer population and/or the aggressive territoriality of stags during the rutting season, which for sika deer can extend from late August to early December (Hayden and Harrington, 2000), and/or a deliberate attempt to migrate offshore in search of new territory? Perhaps after straying into an unfamiliar urban environment populated by humans and other potential predators (e.g. domestic dogs), the deer panicked and raced into the sea to escape rather than back towards its more familiar forest environment from whence it had undoubtedly come. How frequently do deer swim and how far can they swim?

Methods

Current data on Irish deer species distribution and abundance (Carden *et al.*, 2010; Burkitt, 2012) were used to estimate deer densities by species (numbers/ha) on a county basis both in terms of forest cover (Anon, 2012a) and total land area. Previous observations on swimming deer were collated and reviewed by carrying out an extensive on-line web-based search.

Results

Irish deer distribution and abundance

According to the most recent national survey, the total number of deer of all species in the Republic of Ireland (ROI), red deer *Cervus elaphus* L., fallow deer *Dama dama* (L.), sika deer, red*sika deer hybrids and muntjac deer *Muntiacus reevesi* (Ogilby, 1839), was estimated to have increased almost six-fold between 1978 and 2008 (Burkitt, 2012). Indeed, over the latter 30-year period, the compound annual rate of expansion was 7% for red deer, 5% for sika deer and 3% for fallow deer. The total range increase was 565% for red deer, 353% for sika deer and 174% for fallow deer (Carden *et al.*, 2010). Population estimates for 2009, based on cull returns, suggested that the total population of all deer species in the ROI was 303,490 animals and that this was likely to increase by *circa* 30% to 393,000 animals by 2016 (Burkitt, 2012). Sika deer and fallow deer accounted for 47.4% (143,790) and 41% (124,390) of the estimated national deer population (Fig. 1). Significantly, Co. Wicklow accounted for 43.5% (132,040) of the total estimated national deer population, including 77.6% (111,530), 82.5% (10,540) and 66.7% (60) of the total sika deer (143,790), hybrid deer (12,770) and muntjac deer (90) populations respectively (Table 1).

Irish deer densities

In 2012, it was estimated that 10.5% of the total land area of the ROI (731,660 ha) was covered by forest (Anon, 2012a). Significantly, Co. Wicklow accounted for the highest percentage (18%) of forest cover by county. An analysis of the data on the estimated number of deer (Burkitt, 2012), forest cover (Anon, 2012a) and the total land area by county indicated that the average densities of deer of all species in the ROI during 2009 was 0.4/ha of forestry (county range: 0.02-3.68) and 0.04/ha of total land area (county range: 0.003-0.65) (Figs 2 and 3). Significantly, Co. Wicklow accounted for the highest densities of all deer species, 3.7/ha forestry and 0.65/ha total land area, including the highest densities of sika deer (3.1/ha forestry and 0.55/ha total land area) and hybrid deer (0.3/ha forestry and 0.05/ha total land area). The latest census of the ROI's human population (Anon, 2011a) indicated that the average national density of humans was 0.7/ha total land area and that Co. Wicklow ranked seventh at 0.7/ha.

Previous observations on swimming deer

Although there are no known previous published reports about deer swimming in Irish waters, over the last decade several video clips have been posted on <www.youtube.com> of deer swimming during daylight hours in both marine (9) and freshwater (17) environments, particularly in North America. A summary of these web-based reports are presented in Table 2. The vast majority of observations involved white-tailed deer *Odocoileus virginianus* Zimmermann, 1780 (69.2%), black-tailed or mule deer *O. hemionus* (Rafinesque, 1817) (11.5%), and sitka black-tailed deer *O. hemionus sitkensis* Merriam, 1898 (11.5%). There was one record of the chital deer *Axis axis* (Erxleben, 1777) from Maui, Hawaii and a possible red deer from Norway. The vast majority of observations were made in freshwater habitats (65.4%). Mature stags accounted for 42.3% of the observations. Almost 27% of the records involved 2 or more animals, including stags, does and fawns. The monthly frequency distribution of observations was as follows: January, 3; April, 2; July, 2; August, 5; September, 1; October, 8; and November, 5. Over 80% of the observations occurred during the second half of the year (July to November) which would generally coincide with the rutting season. Although all of the observations were made during daylight hours, it is possible that deer may also swim across water bodies during the hours of darkness. In summary, it clear that deer are capable swimmers and probably cross water bodies, particularly freshwater lakes, more frequently that the paucity of observations would suggest, either in search of food, especially in disjoint habitats, or due to other population pressures (e.g. aggressive behaviour during the rutting season, increasing densities and/or predator avoidance).

How far can deer swim?

Reimchen *et al.* (2008) noted that white-tailed deer are known to swim up to 25km between islands in the Great Lakes (North America). Serjeantson (1990) and Mulville (2010) noted that red deer can swim up to 7km in the marine environment. Voorhees (2007) noted that deer often swim across the ocean between Papua New Guinea and Saibai Island (Australia), a distance of *circa* 4-5km.

Discussion

Irish deer populations are increasing in distribution and abundance throughout the country, primarily due to increasing afforestation, legal protection and a lack of natural predators (Carden *et al.*, 2010; Burkitt, 2012). Significantly, during 2009, it was estimated that Co. Wicklow accounted for 43.5% of the total estimated national deer population, including 77.6%, 82.5% and 66.7% of the total sika deer, hybrid deer and muntjac deer populations respectively.

According to Hayden and Harrington (2000), sika deer readily colonise suitable habitats but once established, their home ranges may be relatively small. Although females may spend their entire lifespan within an area as small as 50ha, males tend to travel over greater distances, and during the course of a year they may wander over an area as large as 1,000ha. However, as deer population densities continue to expand, it is likely that increasing numbers of both male and female deer may be forced to forage well beyond their original home ranges and this may result in both increasing levels of hybridization (Senn *et al.*, 2010), introgression (Goodman *et al.*, 1999), negative impacts on ecosystems, and encroachments into nearby urban areas (Putman *et al.*, 2011a, b), particularly densely populated areas close to natural deer habitats. Indeed, it is interesting to note that the estimated minimum density (numbers/ha total land area) of both deer (0.65/ha) and humans (0.7/ha) in Co. Wicklow are broadly similar.

Although it is acknowledged that deer are not exclusively confined to forestry habitats, many species spend a considerable amount of time either in or near forestry. Hayden and Harrington (2000) remarked that sika deer can attain local densities of 0.15-0.5 animals/ha in coniferous plantations with access to good grazing areas. Putman *et al.* (2011a, b) noted that although negative impacts may occur in commercial forestry above a threshold of 0.04 deer/ha, the actual threshold level is likely to be both species specific and habitat dependent. For example, they noted that unfenced native woodlands seem to regenerate naturally if there were fewer than 0.04-0.05/ha large deer (e.g. sika, red and fallow deer) or fewer than 0.25/ha smaller deer (e.g. roe deer *Capreolus capreolus*), while open habitats may suffer only light or moderate impacts from red deer at landscape densities of 0.07-0.08/ha. Putman *et al.* (2011a, b) concluded that although deer density alone is unlikely to be a good predictor of impact, long-term management should be based on the assessment of both actual impacts and the apparent density of deer at the

landscape level. Nevertheless, the estimated density of all deer species in Co. Wicklow (3.7/ha forestry) far exceeds the threshold for commercial forestry (0.04/ha) suggested by Putman *et al.* (2011a), a density that is likely to have a several negative effects on the environment. Indeed, the estimated minimum density (numbers/ha total land area) for all deer species in the ROI during 2009 was 0.04/ha, and apart from Co. Wicklow (0.65), it was also significantly high in Cos Dublin (0.09), Tipperary (0.08), Laois (0.06) and Waterford (0.06).

Although many species of deer are known to be good swimmers and probably take to the water more frequently than observed, there is surprisingly very little published information on the maximum distance that they can swim. Serjeantson (1990) and Mulville (2010) noted that red deer can swim up to 7km, a distance enough for the species to have naturally colonised the Inner Hebrides (Scotland) with ease, but for islands separated by wide or dangerous straits, such as the Outer Hebrides, they concluded that the species must have been introduced by humans. Welsh (2003) also noted that sika deer had also naturally colonised several islands within the Inner Hebrides, such as Skye, Scalpay and Raasay, by swimming across open sea channels. Reimchen *et al.* (2008) noted that although white-tailed deer are known to swim up to 25km between islands in the Great Lakes (North America), strong currents and extensive wave action may limit opportunities for deer to colonise offshore islands in the marine environment. Voorhees (2007) noted that deer often swim across the ocean between Papua New Guinea and Saibai Island (Australia), a distance of *circa* 4-5km.

Although red deer are known to occasionally frequent islands in the Lakes of Killarney (Nugent *pers. comm.*), there is no evidence to date that deer naturally colonised any Irish nearshore or offshore marine islands. It is possible that a lack of suitable habitats on these islands and/or previously low onshore deer population densities may have precluded any inherent pressure for natural colonisation. However, considering the current extremely high and increasing density of deer populations on mainland Ireland, it is possible that some deer, particularly in or near coastal locations, may be forced to emigrate to nearby islands. Perhaps the Greystones' deer represents the vanguard of a potentially lemming-like plunge into the unknown? Under optimum climatic conditions, the mountain peaks of Snowdonia (NW Wales), maximum height 1,085m (Mount Snowdon), are visible from elevations as low as 120m along the Co. Wicklow coast (DQ *pers. observation.*). However, in the unlikely event that a Co. Wicklow deer somehow managed to successfully reach the nearest landmass (Bardsey Island, Lleyn Peninsula, Caernarvonshire, NW Wales), a minimum distance of 96km from Greystones, this remarkable achievement would have major implications for the on-going debate as to whether or not Ireland was naturally colonised by swimming mammals (e.g. red deer) following the end of the last Ice Age *circa* 18,000 years BP (Harrington, 1979; Devoy, 1986; Yalden, 1986; Sleeman, 1997; McCormick, 1999; Searle, 2008; Carden *et al.*, 2012).

Nevertheless, considering that sea levels were estimated to be *circa* 120m lower than present during the Last Glacial Maximum (*circa* 26,000 years BP) (Edwards and Brooks, 2008), the minimum distance between Ireland and the UK would have been significantly shorter, albeit only temporarily, during the immediate post glacial period and this may have facilitated a window of opportunity for the natural colonisation of Ireland by some swimming mammal species such as deer.

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Anon. (2007c) Deer swimming across a Canadian lake it's a fawn.
<http://www.youtube.com/watch?v=Ct640Fjme10>

Anon. (2007d) Deer swimming across a creek.
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FIGURE 1. Estimated number and % of deer species in the ROI during 2009 (Burkitt, 2012).

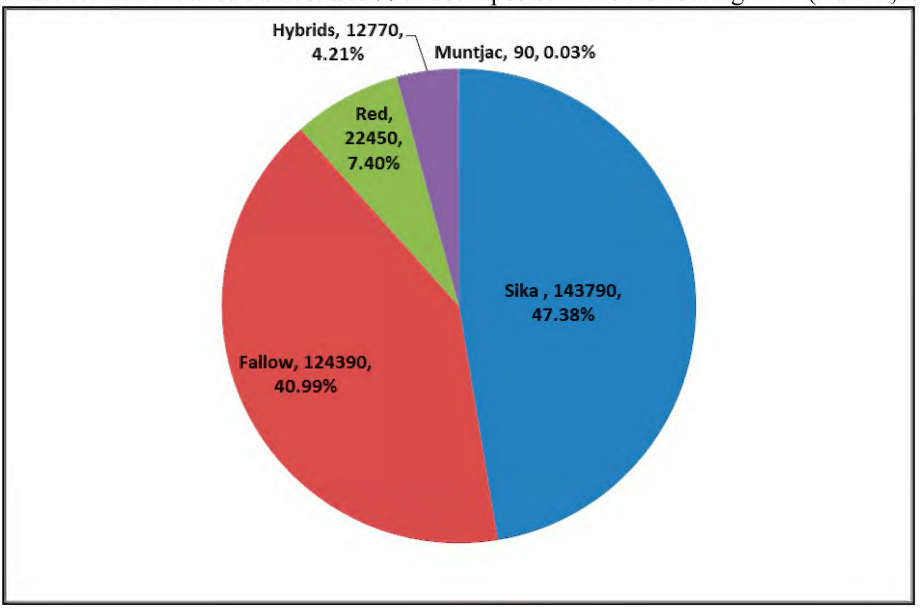

FIGURE 2. Irish deer densities by species (numbers/ha forestry/county) 2009.

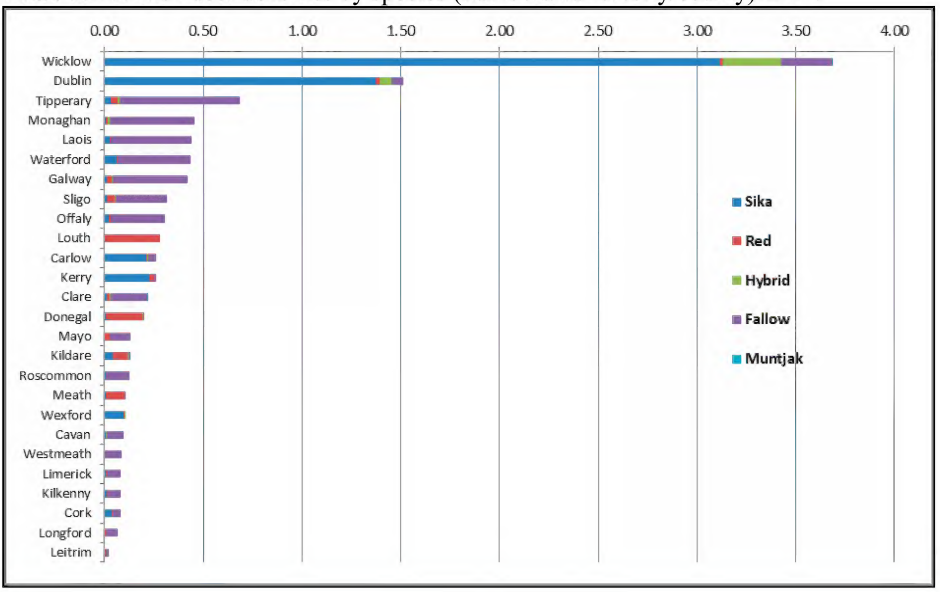

FIGURE 3. Irish deer densities (total numbers/ha total land area/county) 2009.

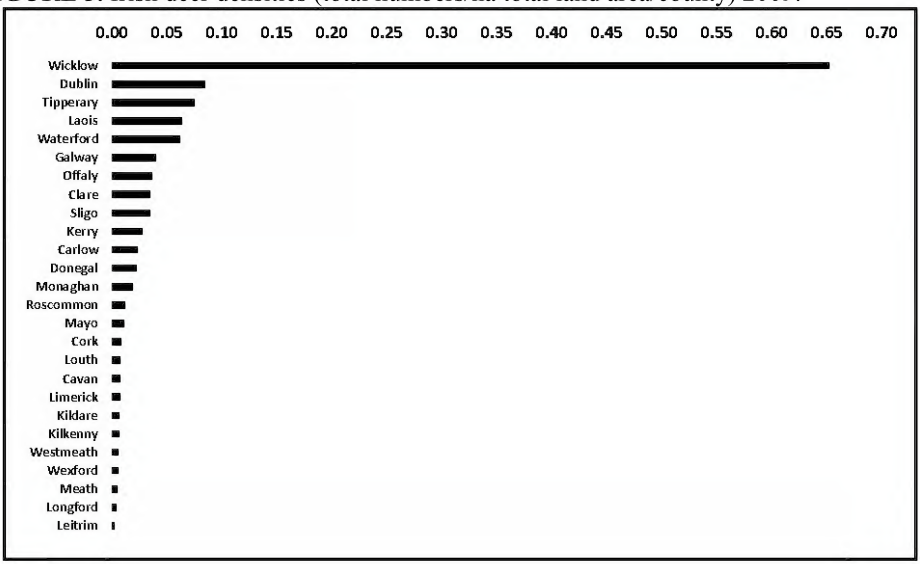

TABLE 1. Estimated numbers and densities of deer by species in Co Wicklow.

Species	Number	%	% National	Densities (number/ha)	
				Forestry	Total Land Area
Sika	111530	84.5	77.6	3.110	0.551
Hybrids	10540	8.0	82.5	0.294	0.052
Fallow	9300	7.0	7.5	0.259	0.046
Red	610	0.5	2.7	0.017	0.003
Muntjac	60	0.05	66.7	0.002	0.0003
Totals	**132040**	**100.0**	**43.5**	**3.682**	**0.652**

TABLE 2. Summary of on-line video clip observations of swimming deer.

Year	Month	Habitat	Location	State	Country	Species	Sex	Reference
2007	January	freshwater	New Melones Lake	California	USA	Black-tailed Deer	doe	Anon. (2007a)
2007	April	marine	c.3.2km off Cape May	New Jersey	USA	White-tailed Deer	unknown	Voorhees (2007)
2007	July	freshwater	Clearwater Lake	Missouri	USA	White-tailed Deer	stag	Anon. (2007b)

TABLE 2 (Continued)

Year	Month	Habitat	Location	State	Country	Species	Sex	Reference
2007	August	freshwater	unknown	unknown	Canada	White-tailed Deer	fawn	Anon. (2007c)
2007	October	marine	Farstad and Averøy	Møre og Romsdal	Norway	Red Deer	doe	Somme (2007)
2007	October	freshwater	Pomme de Terre Lake	Missouri	USA	White-tailed Deer	doe	Garrett (2007)
2007	November	freshwater	unknown	unknown	USA	White-tailed Deer	doe	Anon. (2007d)
2008	April	freshwater	Lake Guntersville	Alabama	USA	White-tailed Deer	3 doe	Anon. (2008a)
2008	September	freshwater	Puzzle Bay	Ontario	Canada	White-tailed Deer	stag	Anon. (2008b)
2010	January	freshwater	Sardis Lake	Mississippi	USA	White-tailed Deer	stag	Woods (2010)
2010	October	marine	c.1.6km off Point Arden	Alaska	USA	Sitka Black-tailed Deer	4 juvenile males	Lowell (2010)
2010	October	freshwater	Little Bald Lake	Ontario	Canada	White-tailed Deer	stag	McNally (2010)
2010	November	marine	Montauk	New York	USA	White-tailed Deer	stag	Anon. (2010)
2011	August	freshwater	Rotary Marches	unknown	USA	Black-tailed Deer	doe & 2 fawns	Anon. (2011b)
2011	August	freshwater	Lake Lanier (Buford)	Georgia	USA	White-tailed Deer	2 stags	Anon. (2011c)
2011	November	freshwater	Lake Chehaw	Georgia	USA	White-tailed Deer	doe	Anon. (2011d)
2011	October	freshwater	Stoney Lake (Humboldt)	Saskatchewan	Canada	White-tailed Deer	stag	Marcus (2011)
2012	January	marine	off Fort Myers	Florida	USA	White-tailed Deer	unknown	Anon. (2012b)
2012	October	marine	Wailea Beach (Maui)	Hawaii	USA	Chital Deer	stag	Walsh (2012)
2012	October	freshwater	Lake Kissimmee	Florida	USA	White-tailed Deer	stag	Anon. (2012c)
2012	October	marine	c.4.8km off Casco Bay	Maine	USA	White-tailed Deer	unknown	Wallace (2012)
2012	November	marine	Oak Bay	British Columbia	Canada	Sitka Black-tailed Deer	stag	Anon. (2012d)
2013	August	marine	Hopkins Beach	California	USA	Black-tailed Deer	herd (5)	Anon. (2013)
2013	August	freshwater	Clear Lake	Michigan	USA	White-tailed Deer	unknown	Peterson (2013)
2013	November	freshwater	Lake near Monticello	Virginia	USA	White-tailed Deer	2 stags	Anderson (2013)
2014	July	freshwater	Lake near Kodiak	Alaska	USA	Sitka Black-tailed Deer	herd (9)	Anon. (2014)

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REASSESSMENT OF EARLY NINETEENTH CENTURY TARDY RECORDS IN THE DUBLIN UNIVERSITY ZOOLOGICAL MUSEUM: PART 2 (COLEOPTERA, LEPIDOPTERA, NEUROPTERA AND BIOGRAPHICAL NOTE)

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Abstract

Irish records of the following species, based on material in the early nineteenth century Tardy Collection, are reviewed: *Paederus littoralis* Gravenhorst and *Bledius annae* Sharp (Staphylinidae), *Carabus violaceus* Linnaeus (Carabidae), *Aricia agestis* Denis & Schiffermüller (Lycaenidae), *Aporia crataegi* (Linnaeus) (Pieridae) and *Chrysopa abbreviata* Curtis (Chrysopidae) are rejected. However, the Tardy record of *Calosoma inquistor* Linnaeus (Carabidae) from Powerscourt, Co. Wicklow is accepted. A previously unpublished portrait of James Tardy and biographical information are also included.

Key words: James Tardy, Irish Coleoptera, Irish Lepidoptera, Irish Neuroptera, Dublin Huguenot families

Introduction

In a previous paper on the Tardy Coleoptera collection (Good, 2013), several references were made to an unpublished manuscript (MS) by the senior author (JAG) in the Dublin University Zoological Museum which assessed Tardy records of *Paederus littoralis* Gravenhorst (Staphylinidae), *Calosoma inquisitor* Linnaeus and *Carabus violaceus* Linnaeus (Carabidae). While it was originally intended to publish that MS separately, it has been suggested that it would be better to publish this as a part of the original paper in the same journal. Also, in the meantime, a Tardy specimen, marked Irish, of the brown argus butterfly (*Aricia agestis* (Denis & Schiffermüller)), and a similarly marked lacewing specimen, under the label of *Chrysopa perla* (Linnaeus) (now *C. abbreviata* Curtis), have been discovered in the Dublin University Zoological Museum (DUZM), and the validity of these require reassessment. In addition, a portrait of James Tardy, in the possession of MB and not previously known in Ireland, is reproduced here, and some further biographical details are also included.

Methods

Details of interpretation of the collection and its associated manuscripts, other than those mentioned below, are given in Good (2013).

Results

COLEOPTERA

Paederus littoralis Gravenhorst (Staphylinidae) - Rejected (English specimen)

Following a recommendation to delete the single published Irish record of *Paederus littoralis* Gravenhorst (Good and O'Connor, 2009), a further putative Irish specimen was found in the DUZM Tardy collection. Good and Linnie (1990) concluded that *potential* Irish Tardy records are represented by specimens marked with green wax on their pinheads which are also recorded as "certainly Irish" in the MS list of Irish insects by A. H. Haliday (now held in the NMI). The Tardy collection, acquired by Thomas Coulter for the DUZM in 1842 (Nelson, 1983), was updated by Haliday in or after 1847 (Ball, 1847; Nash and O'Connor, 2011), and Haliday had available to him James Tardy's manuscripts, now lost (Good and Linnie, 1990). The single Tardy specimen of *Paederus littoralis* (Gravenhorst) (= *litoralis* auct. (misspelling)) was redetermined using Lohse (1964) and with English reference material. This specimen has green wax on its pinhead, which was used to indicate Irish provenance (O'Connor and Nash, 1982). The entry in Haliday's MS list reads: "Paederus ~~litoralis~~", with the line through *litoralis* in red ink, followed by a cross within a circle (meaning "certainly Irish") in ink but with a cross-out ('X') through it in pencil, and then "ta!" meaning 'Tardy!', and finally "fornent sp" in pencil which is overwritten with "fornent" in ink. The term 'fornent sp.' is taken to mean 'close-by species', indicating that Haliday considered the record not to be *litoralis*. That Haliday crossed out both 'litoralis' and the 'certainly Irish' icon also indicates that he doubted the record, and it has not been cited in any subsequent publication. It is most probable that the record refers to *P. riparius* (Linnaeus). This is deduced from the subsequent addition of *riparius* to his MS list, with Tardy ('ta') cited as the first record, despite there being no other *Paederus* specimen or vacant pin-hole in the DUZM Tardy collection. It is also *riparius*, and not *littoralis*, which is marked as Irish in a copy of Curtis' (1829) catalogue, apparently made out for the DUZM by Haliday (see Appendix 1 in Good, 2013). Yet, critically, it is a specimen of *littoralis*, not *riparius*, which remains in the collection, marked Irish. It would appear that an unlabelled English specimen was initially marked green on the misinterpretation that it was Irish (virtually all the non-Irish marked specimens in the collection are marked red, indicating English provenance). Haliday may have subsequently, on the basis of manuscript information, rejected the record as Irish, but he did not apparently correct the specimen marking.

***Carabus violaceus* Linnaeus (Carabidae) - Rejected (English specimens)**

Except for two Tardy specimens, all available specimens supporting Irish records of *Carabus violaceus* Linnaeus have either proven to be *C. problematicus* Herbst or are doubtfully Irish (Speight *et al.*, 1982; Anderson *et al.*, 2000). *C. violaceus* is represented in the DUZM Tardy collection by a single specimen with green wax on its pin-head, and by another specimen derived from the DUZM Tardy collection marked "Ireland" in the NMI. The DUZM specimen was kindly confirmed as *C. violaceus* by Dr Martin C. D. Speight. The entry in Haliday's MS list reads: "*violaceus*", followed by a cross within a circle (meaning "certainly Irish") and "ta", "Cork, WC." "Dublin, Mr Tardy". ('WC' refers to William Clear). Critically, however, *C. violaceus*, although cited as from "Dublin" in Haliday's MS list, is omitted from the Dublin list of Hogan (1854), which was based on information supplied, *inter alia*, by Haliday. Perhaps Haliday did not subsequently amend his MS list by crossing out this species? If an English specimen of *P. littoralis* was marked green in error for a similar species (*P. riparius*), then it is quite possible that an unlabelled English *C. violaceus* specimen could also be marked green in error for a similar species (*C. problematicus*). It would also be unusual for this species, if it did occur in Ireland, not to be more widespread (see discussion in Anderson *et al.* (2000)). The Tardy record for *C. violaceus* is rejected, therefore, even though it cited as Irish by Haliday.

***Calosoma inquisitor* Linnaeus (Carabidae) - Accepted (native)**

However, the record of *Calosoma inquisitor* (Linnaeus), currently retained on the Irish list (Anderson *et al.*, 2000), is acceptable because, unlike *Paederus littoralis* or *Carabus violaceus*, it would not have been easily confused with another species. In addition to there being a specimen marked Irish in the DUZM Tardy collection and another Tardy specimen in the NMI, Curtis (1830) reported of this unmistakable species that "Mr. Tardy has seen them flying amongst oak trees at Powerscourt in Ireland", and Tardy appears to have been a sufficiently well-respected entomologist (see below) not to have misidentified such a species. Alfred Furlong is also recorded as having collected this species in Powerscourt (Haliday MS list) (and a specimen labelled "Deerpark, Powerscourt, Co. Wicklow" is held in the NMI), meeting Allen's criterion of "an unmistakable species credibly reported by two or more authors independently" (Allen, 1968).

***Bledius annae* Sharp (Staphylinidae) - Rejected (possible English specimen)**

Two Tardy *Bledius* specimens in the NMI, labelled "*Hesperophilus talpa* ? *vix*" in Haliday's hand, were provisionally determined by Good (2013) as *Bledius annae* Sharp. However, Lott (2008) considered that Irish records of *B. annae* probably refer to *B. pallipes* (Gravenhorst). While all the Irish material of *B. annae* has not yet been checked, and the Tardy specimens were only provisionally determined as this species, it is nonetheless a possible outcome that these Tardy specimens may represent the only Irish records of *B. annae*. It is necessary, therefore, to

examine their validity; could English material of *B. annae* have been inadvertently selected as representing *B. talpa* following the manner in which English *Paederus littoralis* were confused as Irish (see above)? The answer is yes. *B. annae* was only separated from *B. pallipes* by Sharp in 1911, and *B. annae* and *B. pallipes* are very similar to *B. subterraneus* (see Fowler (1888) for example), the name which was subsequently added to Haliday's MS list just below "~~talpa?~~". In the 1830's, *talpa* was one of only seven species of *Bledius* listed in Curtis (1829) *Catalogue of British insects*, so confusion of these species in Tardy's time is quite likely. The record, if it is indeed based on *B. annae* specimens, must therefore be rejected, as the possibility of English specimens being inadvertently marked Irish cannot be ruled out.

LEPIDOPTERA

Aricia agestis Denis & Schiffermüller (Lycaenidae) - Rejected (English specimen)

A specimen of the brown argus (*Aricia agestis* Denis & Schiffermüller), marked Irish, was found in the nineteenth century British and Irish Lepidoptera collection in the Dublin University Zoological Museum (DUZM). This collection is a combination of remnants of a number of collections including that of James Tardy. The brown argus specimen, while not labelled, has green wax on its pinhead, which was the method of marking specimens considered to be Irish by A. H. Haliday (O'Connor and Nash, 1982). In Haliday's MS list of Irish insects, now held in the National Museum of Ireland (NMI), *Aricia agestis* is annotated with a "certainly Irish" icon and "ta" meaning Tardy. Based on the marking of the Tardy Coleoptera, the specimen can be interpreted as representing the Tardy record cited by Haliday.

In Birchall's first review of Irish Lepidoptera, *A. agestis* is cited as being recorded from "Dundrum, near Dublin" (Birchall, 1866). Subsequently, he removed the species from the Irish list, stating, without further detail, that "no trustworthy confirmation has been obtained of the occurrence in Ireland of [this and other] species", and that "the foodplant, *Helianthemum vulgare*, is not, I believe, found in Ireland" (Birchall, 1873). However, *A. agestis* also feeds on *Erodium* spp. and *Geranium sanguineum*, which occur on the mid-east coast of Ireland (Preston *et al.*, 2002). Thus, we have a putative Irish specimen, available foodplants, and an unpublished verification by A. H. Haliday.

However, the record cannot be accepted for the following reasons. The first is that green-marked Tardy specimens could be of English origin, where the species so marked could have been confused with a related Irish species (see discussion of *Paederus littoralis* and *Carabus violaceus* above). *A. agestis* is superficially similar to a small female *Polyommatus icarus* (Rottemburg) (common blue) with brown uppersides; indeed such a specimen taken near Athy (Co. Kildare) by K. M. Dunlop occurs in the NMI. If a written record of *A. agestis* was erroneously based on such a female *P. icarus*, and an English specimen subsequently

inadvertently marked as representing this record, then this is no different to what apparently happened with the *Paederus littoralis* specimen, except that Haliday's MS list was not corrected subsequently. Secondly, the annotated Curtis (1829) catalogue, which was apparently annotated by Haliday after his initial MS list was produced (the latter in 1838 (see Ashe, 1986)), does not mark *Aricia agestis* as Irish. Thus the Irish record of *Aricia agestis*, despite it being represented by a specimen marked Irish and verified in Haliday's MS list, must be rejected as unreliable.

***Aporia crataegi* (Linnaeus) (Pieridae) - Rejected (unverified specimen)**

Haliday's MS list also annotates the black-veined white (*Aporia* (=*Pieris*) *crataegi* (Linnaeus) (Pieridae)) with a "certainly Irish" icon, followed by "ta, eg", meaning Tardy and Egan (the latter who was a contemporary entomologist (Nash, 1983)). No specimens marked Irish were found in the DUZM or NMI collections, and neither does Haliday's annotated copy of Curtis (1829) list *Pieris crataegi* as Irish. No Egan specimen has apparently been located, but Birchall (1866) stated that "Mr Greene inserts this species in his list on the authority of Mr. Hely".

The record must be rejected as no specimen is available (note that the longhorn beetle *Aromia moschata* (Linnaeus), a similarily distinctive species which would be recognisable to an experienced entomologist like Tardy, was accepted by Good (2013). However, in the latter case, the specimen was removed and a pinhole remained with a green disc (indicating Irish provenance); also Haliday appears to have paid more attention to updating his MS list for Coleoptera, in which he had a greater interest (Nash and O'Connor, 2011), than updating for Lepidoptera).

NEUROPTERA

***Chrysopa abbreviata* Curtis (= *perla* (Linnaeus)) (Chrysopidae) - Rejected (misidentification)**

This species is included on the Irish list (O'Connor and Nelson, 2012), with the following annotation: "certainly Irish according to Haliday MS (King and Halbert, 1910), but since then there have been no records and its Irish status requires confirmation". The entry in Haliday's MS list is cited by King and Halbert (1910) as "*Chrysopa perla* (Ste?) = *reticulata* ?, *cancellata*, certainly Irish, *Hely* !". A specimen was found in the DUZM Tardy collection standing under the label *'Chrysopa perla'*; this was redetermined as *Chrysotropia* (= *Chrysopidia*) *ciliata* (Wesmael) using the key and description in Plant (1997) and in comparison with an English reference specimen of *C. abbreviata*. It is possible that this was a Tardy specimen determined by Hely, and hence the authority was attributed to Hely by Haliday. Given this possibility and the misidentification, *C. abbreviata* should probably be deleted from the Irish list.

Biographical note: James Tardy

The following note supplements the information given in Good and Linnie (1990).

James Tardy (1782-1835) was the youngest son of a successful Dublin Huguenot sugar refiner, who was originally a French naval officer captured by the British in 1759 (Lee, 1936). Both are buried in the Huguenot cemetry in Merrion Row, Dublin (and the year of birth of James was determined from the inscription therein). That he was able to fully pursue natural history may also have been assisted by his apparent wealth as a result of his marriage to Ann Johnston, a granddaughter of a cousin of Queen Anne (Agnew, 1874). No illustration of James Tardy has been available to-date in Ireland. Now, a portrait of James Tardy, which is in the possession of the junior author (MB), is reproduced here (see Plate 1).

James Tardy was an "esteemed entomologist" of his time (Anon., 1838). Davis (1832) described him as "the most active of the few entomologists in Dublin" (Nash, 1983), and a contemporary, Dr Charles Farran, lamented him as "an enthusiastic naturalist, to whom we are all indebted as giving the first impulse to natural history in Dublin" (Farran, 1854). He was a respected friend of N. A. Vigors, first Secretary of the Zoological Society, on whose recommendation John Curtis named *Rhopalomesites tardyi* (Curtis) (Curculionidae) after him (Nash, 1983). He was actively collecting in the 1810s; Brown (1818) records of the bivalve species *Chama cor* Linnaeus (now *Glossus humanus* (Linnaeus)) that "one valve of this very rare shell was found in Dublin Bay by James Tardy".

While a few of the unique or almost unique Tardy Irish Coleoptera records, like *Calosoma inquisitor,* can be accepted, a number of the other such records with Irish marked specimens in his collection and annotated as 'certainly Irish' in Haliday's MS list are open to doubt. However, this is not a completely 'deplorable loss of skilled observation', as de Vismes Kane (1901) said of his much less-organised Lepidoptera, as the collection, taken as a whole, indicates relatively minor losses to the Irish coleopterous fauna during the nineteenth century (see Good, 2013). A discussion of other rejected and accepted Tardy records is given in Good (2013).

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PLATE 1. A portrait of James Tardy (1782-1835).

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FURTHER RECORDS OF CADDISFLIES (TRICHOPTERA) FROM CO. FERMANAGH INCLUDING SEVEN SPECIES NEW TO NORTHERN IRELAND

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Abstract

During a recent collecting trip to the lakelands of Co. Fermanagh, the authors recorded 33 species of Trichoptera including seven species new to Northern Ireland.
Key words: Trichoptera, Northern Ireland, Fermanagh, new records, distribution

Introduction

O'Connor, Bond and O'Connor (2013) reviewed the caddisfly fauna of County Fermanagh, an important wetland area in Ireland, and listed 16 species from the county. O'Connor and Bond (2014) added *Oxyethira flavicornis* (Pictet). O'Connor and Davy-Bowker (2014) reported another 29 species based on larvae collected in running water. Recently, the authors revisited the county to obtain adults with an emphasis on collecting at standing water. Altogether, 33 species were captured and seven of these are new to Northern Ireland. A total of 19 species are new to Fermanagh bringing the total to 65 species and representing over 43% of the Irish fauna. Undoubtedly, many more species await discovery in the region.

The adults were taken by sweeping water-side vegetation with a hand-net, searching spider webs or by Heath portable light-traps. Lower Lough Erne was much more accessible than the Upper Lough Erne and it was possible to collect from paths beside the lake. All the material was identified by the senior author using Mosely (1939), Malicky (1983) and Barnard and Ross (2012). Irish grid references are given for each site. Voucher specimens of the species new to Northern Ireland will be deposited in the National Museum of Ireland.

The records

GLOSSOSOMATIDAE

***Agapetus ochripes* Curtis, 1834**

Arney River: Old Drumane Bridge (H2336), swept, 3♂♂ 26 August 2014.

New to Co. Fermanagh, *Agapetus ochripes* was recorded from Co. Antrim by King and Halbert (1910).

HYDROPTILIDAE

***Agraylea multipunctata* Curtis, 1834**

River Erne: Cloonatrig near Bellanaleck (H2637), swept, 2♂♂ 26 August 2014, light-trap placed on pontoon, 2♂♂♀ 26 August 2014. Upper Lough Erne: Enniskillen (H2244), swept, ♂ 27 August 2014.

A single larva was recorded from the River Finn in Co. Fermanagh by O'Connor and Davy-Bowker (2014).

***Hydroptila angulata* Mosely, 1922**

Lower Lough Erne: Castle Archdale Country Park (H1758), swept, 10♂♂2♀♀ 26 August 2014.

New to Co. Fermanagh, *Hydroptila angulata* was recorded from Co. Armagh by O'Connor and Bond (2014).

***Hydroptila forcipata* (Eaton, 1873)** **New to Northern Ireland**

Arney River: Old Drumane Bridge (H2336), swept, ♀ 26 August 2014.

Hydroptila forcipata is a widespread Irish species (Fig. 1).

***Hydroptila pulchricornis* Pictet, 1834** **New to Northern Ireland**

Mill Lough: near Bellanaleck (H2438), light-trap 3♂♂ 26 August 2014.

Hydroptila pulchricornis is a local species in Ireland (Fig. 2).

***Hydroptila sparsa* Curtis, 1834**

Arney River: Old Drumane Bridge (H2336), swept, 15♂♂4♀♀ 26 August 2014. Lower Lough Erne: hotel near Rockfield (H2053), swept, ♂ 26 August 2014.

New to Co. Fermanagh, *Hydroptila sparsa* was recorded from Co. Tyrone by O'Connor and Bond (2009).

***Ithytrichia lamellaris* Eaton, 1873** **New to Northern Ireland**

Arney River: Old Drumane Bridge (H2336), swept, ♂ 26 August 2014.

Ithytrichia lamellaris is widely distributed in Ireland (Fig. 3).

***Oxyethira flavicornis* (Pictet, 1834)**

Lower Lough Erne: Castle Archdale Country Park (H1758), swept, ♂ 26 August 2014. Mill Lough: near Bellanaleck (H2438), light-trap 30♂♂ 26 August 2014. River Erne: Cloonatrig, Bellanaleck (H2637), light-trap placed on pontoon, 3♂♂♀ 26 August 2014. Upper Lough Erne: Bellanaleck (H2339), swept, 7♂♂♀ 27 August 2014, Knockninny near Derrylin (H2731), swept, 27♂♂20♀♀ 27 August 2014.

Oxyethira flavicornis was recorded from Derryvore Townland near Crom, Co. Fermanagh, by O'Connor and Bond (2014).

POLYCENTROPODIDAE

***Cyrnus flavidus* McLachlan, 1864**

Mill Lough: near Bellanaleck (H2438), light-trap ♂ 26 August 2014.

New to Fermanagh, *Cyrnus flavidus* was recorded from Co. Armagh by King and Halbert (1910).

***Cyrnus trimaculatus* (Curtis, 1834)**

Lower Lough Erne: Castle Archdale Country Park (H1758), swept, 4♂♂ 26 August 2014. Upper Lough Erne: Bellanaleck (H2339), swept, ♂ 27 August 2014.

Cyrnus trimaculatus has been recorded from all six counties in Northern Ireland (O'Connor and Davy-Bowker, 2014).

***Holocentropus picicornis* (Stephens, 1836)**

Mill Lough: near Bellanaleck (H2438), light-trap ♂♀ 26 August 2014.

New to Co. Fermanagh, *Holocentropus picicornis* was recorded from Co. Armagh by King and Halbert (1910).

***Polycentropus flavomaculatus* (Pictet, 1834)**

Woodford River: near Aghalane (H3419), swept, ♂ 27 August 2014.

Polycentropus flavomaculatus has been recorded from all six counties in Northern Ireland (O'Connor and Davy-Bowker, 2014).

PSYCHOMYIIDAE

***Psychomyia pusilla* (Fabricius, 1781)**

Arney River: Old Drumane Bridge (H2336), swept, ♂2♀♀ 26 August 2014. Lower Lough Erne: Castle Archdale Country Park (H1758), swept, ♀ 26 August 2014.

Psychomyia pusilla has been recorded from Cos Antrim, Armagh, Derry, Fermanagh and Tyrone (O'Connor and Davy-Bowker, 2014)

***Tinodes waeneri* (Linnaeus, 1758)**

Lower Lough Erne: hotel near Rockfield (H2053), swept, 8♂♂7♀♀ 26 August 2014, Castle Archdale Country Park (H1758), swept, 15♂♂9♀♀ 26 August 2014. Mill Lough: near Bellanaleck (H2438), light-trap ♂5♀♀ 26 August 2014. River Erne: Cloonatrig, Bellanaleck (H2637), light-trap placed on pontoon, ♂ 26 August 2014. Upper Lough Erne: Bellanaleck (H2339), swept, ♂ 27 August 2014, Knockninny near Derrylin (H2731), swept, ♂2♀♀ 27 August 2014.

Tinodes waeneri has been recorded from all six counties in Northern Ireland (O'Connor and Davy-Bowker, 2014).

HYDROPSYCHIDAE

***Cheumatopsyche lepida* (Pictet, 1834)**

Arney River: Old Drumane Bridge (H2336), swept, ♂ 26 August 2014.

New to Co. Fermanagh, *Cheumatopsyche lepida* was previously only known in Northern Ireland from two larvae taken in the River Strule, Co. Tyrone (O'Connor and Davy-Bowker, 2014).

PHRYGANEIDAE

***Agrypnia obsoleta* (Hagen, 1864)** **New to Northern Ireland**

Mill Lough, near Bellanaleck (H2438), light-trap 5♂♂♀ 26 August 2014.

King and Halbert (1910) give a W. F. Johnson record of *Agrypnia obsoleta* from Kellystewart Lough in Co. Armagh. This is however an error. The site's name is misspelt and assigned to the wrong county. Johnson (1892, 1893) actually collected at Killystewart Lough in Co. Donegal. He describes the waterbody as being on the top of a hill near Ardara. The known Irish distribution is shown (Fig. 4).

***Agrypnia pagetana* Curtis, 1835** **New to Northern Ireland**

Mill Lough: near Bellanaleck (H2438), swept 2♂♂ and light-trap 3♂♂ 26 August 2014.

Agrypnia pagetana is mainly a northern species in Ireland (Fig. 5).

GOERIDAE

***Goera pilosa* (Fabricius, 1775)**

Lower Lough Erne: Castle Archdale Country Park (H1758), swept, ♂ 26 August 2014.

Goera pilosa has been recorded from Cos Armagh, Fermanagh and Tyrone (O'Connor and Davy-Bowker, 2014).

LIMNEPHILIDAE

***Limnephilus auricula* Curtis, 1834**

Upper Lough Erne: Knockninny near Derrylin (H2731), swept, ♀ 27 August 2014.

New to Co. Fermanagh, *Limnephilus auricula* was recorded from Co. Armagh by King and Halbert (1910).

***Limnephilus flavicornis* (Fabricius, 1787)**

Mill Lough: near Bellanaleck (H2438), light-trap ♂4♀♀ 26 August 2014. Upper Lough Erne: Bellanaleck (H2339), swept, 2♂♂2♀♀ 27 August 2014, Enniskillen (H2244), swept, ♂♀ 27 August 2014, Knockninny near Derrylin (H2731), in spider webs, 3♂♂ 27 August 2014..

Limnephilus flavicornis has been recorded from Cos Armagh and Fermananagh (O'Connor and Davy-Bowker, 2014).

***Limnephilus lunatus* Curtis, 1834**

River Erne: Cloonatrig, Bellanaleck (H2637), light-trap placed on pontoon, 2♂♂ 26 August 2014.

Limnephilus lunatus has been recorded from all six counties in Northern Ireland (O'Connor and Davy-Bowker, 2014).

***Limnephilus marmoratus* Curtis, 1834**

Mill Lough: near Bellanaleck (H2438), light-trap ♂ 26 August 2014. Upper Lough Erne: Enniskillen (H2244), swept, ♀ 27 August 2014.

Limnephilus marmoratus has been recorded from Cos Antrim, Armagh, Down and Fermanagh (O'Connor and Davy-Bowker, 2014).

***Limnephilus vittatus* (Fabricius, 1798)**

Arney River: Old Drumane Bridge (H2336), swept, ♀ 26 August 2014. Upper Lough Erne: Knockninny near Derrylin (H2731), swept, ♂3♀♀ 27 August 2014.

New to Co. Fermanagh, *Limnephilus vittatus* was recorded from Co. Armagh by King and Halbert (1910).

SERICOSTOMATIDAE

***Sericostoma personatum* (Spence, 1826)**

Lower Lough Erne: Castle Archdale Country Park (H1758), swept, ♀ 26 August 2014.

Sericostoma personatum has been recorded from all six counties in Northern Ireland (O'Connor and Davy-Bowker, 2014).

LEPTOCERIDAE

***Athripsodes aterrimus* (Stephens, 1836)**

Mill Lough: near Bellanaleck (H2438), light-trap 12♂♂ 26 August 2014.

Athripsodes aterrimus has been recorded from Cos Down, Fermanagh and Tyrone (O'Connor and Davy-Bowker, 2014).

***Athripsodes cinereus* (Curtis, 1834)**

Lower Lough Erne: Castle Archdale Country Park (H1758), swept, 2♂♂5♀♀ 26 August 2014.

Athripsodes cinereus has been recorded from all six counties in Northern Ireland (O'Connor and Davy-Bowker, 2014).

***Ceraclea fulva* (Rambur, 1842)**

Upper Lough Erne: Knockninny near Derrylin (H2731), swept, ♂♀ 27 August 2014.

Ceraclea fulva has been recorded from the Crom Estate also on Upper Lough Erne (O'Connor, Bond and O'Connor, 2013).

***Mystacides azurea* (Linnaeus, 1761)**

Lower Lough Erne: Castle Archdale Country Park (H1758), swept, ♂♂♀♀ 26 August 2014. Upper Lough Erne: Bellanaleck (H2339), swept, ♀ 27 August 2014.

New to Co. Fermanagh, *Mystacides azurea* has been recorded from the other five counties of Northern Ireland (O'Connor and Davy-Bowker, 2014).

***Mystacides longicornis* (Linnaeus, 1758)**

Lower Lough Erne: hotel near Rockfield (H2053), swept, 2♂♂5♀♀ 26 August 2014. Mill Lough: near Bellanaleck (H2438), light-trap 13♂♂9♀♀ 26 August 2014. Upper Lough Erne: Bellanaleck (H2339), swept, ♀ 27 August 2014, Enniskillen (H2244), swept, ♀ 27 August 2014, Knockninny near Derrylin (H2731), swept, 12♂♂7♀♀ 27 August 2014.

New to Fermanagh, *Mystacides longicornis* was recorded from Cos Antrim and Armagh by King and Halbert (1910).

***Oecetis furva* (Rambur, 1834)** **New to Northern Ireland**

Mill Lough: near Bellanaleck (H2438), light-trap 26♂♂ 26 August 2014. Upper Lough Erne: Bellanaleck (H2339), swept, ♀ 27 August 2014.

The known Irish distribution of *Oecetis furva* is shown (Fig. 6).

***Oecetis lacustris* (Pictet, 1834)** **New to Northern Ireland**

River Erne: Cloonatrig, Bellanaleck (H2637), light-trap placed on pontoon, ♂ 26 August 2014.

The known Irish distribution of *Oecetis lacustris* is shown (Fig. 7).

***Oecetis ochracea* (Curtis, 1825)**

River Erne: Cloonatrig, Bellanaleck (H2637), light-trap placed on pontoon, 2♂♂♀ 26 August 2014.

New to Co. Fermanagh, *Oecetis ochracea* was recorded from Co. Armagh by King and Halbert (1910).

***Triaenodes bicolor* (Curtis, 1834)**

Mill Lough: near Bellanaleck (H2438), light-trap 2♂♂2♀♀ 26 August 2014.

New to Co. Fermanagh, *Triaenodes bicolor* was recorded from Co. Armagh by King and Halbert (1910).

Acknowledgement

The maps were prepared using DMAP and the senior author is indebted to Alan Morton for providing a special programme for producing them.

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FIGURES 1-4. The Irish distributions of *Hydroptila forcipata* (Eaton), *Hydroptila pulchricornis* Pictet, *Ithytrichia lamellaris* Eaton and *Agrypnia obsoleta* (Hagen).

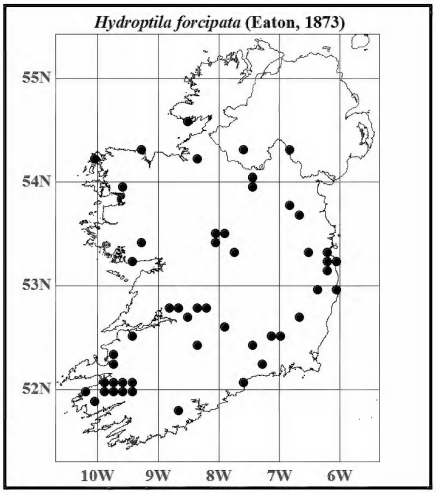

Figure 1: *Hydroptila forcipata.*

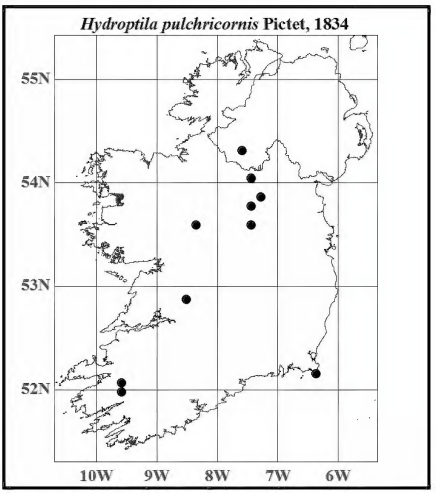

Figure 2: *Hydroptila pulchricornis*.

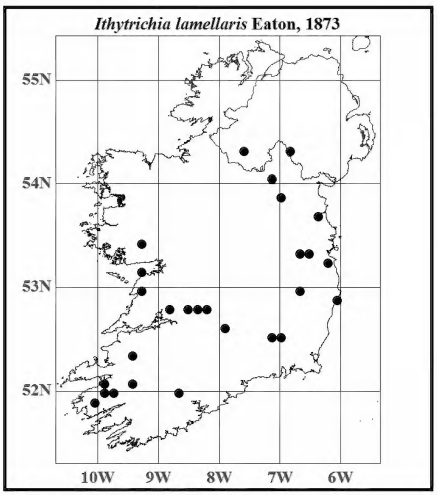

Figure 3: *Ithytichia lamellaris.*

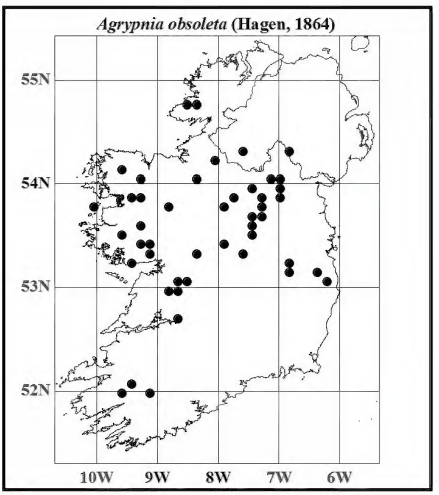

Figure 4: *Agrypnia obsoleta.*

FIGURES 5-7. The Irish distributions of *Agrypnia pagetana* Curtis, *Oecetis furva* (Rambur) and *Oecetis lacustris* (Pictet).

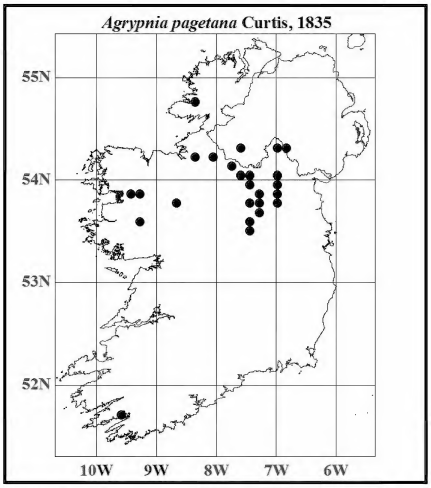

Figure 5: *Agrypnia pagetana.*

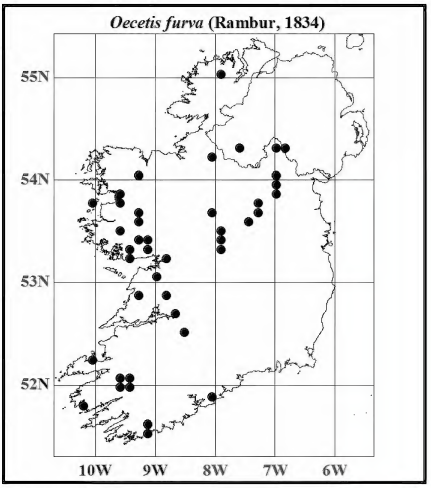

Figure 6: *Oecetis furva.*

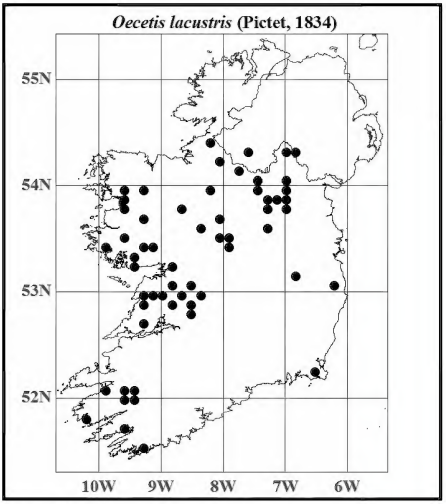

Figure 7: *Oecetis lacustris.*

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RECORDS FOR UNCOMMON IRISH BEETLES (COLEOPTERA), INCLUDING *PHACOPHALLUS PARUMPUNCTATUS* (GYLLENHAL) (STAPHYLINIDAE)

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Abstract

Records of fourteen uncommon species of Irish beetles (Coleoptera) are presented. The following families are represented: Oedemeridae, Carabidae, Leioidae, Staphylinidae, Heteroceridae, Tenebrionidae and Chrsomelidae. The record of *Phacophallus parumpunctatus* (Gyllenhal, 1827) is the first Irish one since 1854.

Key words: Coleoptera, Ireland, records, distribution, *Phacophallus parumpunctatus*

Introduction

The author's natural history activities over recent years have mainly involved studying spiders and myriapods. However in 2013, my research was concentrated on beetles. A number of interesting discoveries were made and these are detailed below, along with a few additional records gathered over recent years.

OEDEMERIDAE

***Oedemera lurida* (Marsham, 1802)**

DUBLIN: Sean Moore Park (O190331), 26 July 2011, specimens were scattered on vegetation on a coastal headland.

CARABIDAE

***Amara eurynota* (Panzer, 1796)**

CORK: Cobh (W7966), 2 August 1995, waste ground.

The only other Co. Cork record would appear to be that reported by Moore (1981). The species seems to be a very scarce beetle over much of Ireland (Anderson, McFerran and Cameron, 2000).

***Harpalus rubripes* (Duftschmidt, 1812)**

CARLOW: Carlow (S723764), 25 April 2010, a single male, waste ground.

A scarce southern species in Ireland (Anderson, McFerran and Cameron, 2000).

LEIOIDAE

***Choleva fagniezi* Jeannel, 1922**

SLIGO: Bartragh (G262290). ♂ 5 July 2013, trapped in a hollow in coastal sand dunes.

Choleva fagniezi was added to the Irish list by McCormack, Nolan and Regan (2006), from upland sites in Cos Mayo and Donegal. Clearly the species is widespread in the north-west of Ireland and not confined to the uplands.

***Leptinus testaceus* Muller, 1817**

CORK: Poulgorm Bridge (W210353), 27 February 2008, a few individuals sieved from leaf litter, collected at the edge of disturbed mixed woodland. No particular sign of mammal activity at this site, however the leaf litter bore a heavy covering of bird droppings. One individual stayed alive unattended in a plastic lunchbox containing leaf litter for 4 months. Knocknabehy (W604781), 12 October 2012, sieved from leaf litter collected in mixed woodland.

STAPHYLINIDAE

***Astenus lyonessius* (Joy, 1908)**

SLIGO: Cooanmore Point (G393383), ♀ 23 May 2013, under a stone with ants, exposed coastal headland.

***Scopaeus sulcicollis* (Stephens, 1833)**

Scopaeus sulcicollis (Stephens) was added to the Irish list by Bullock (1935), and the only other Irish record I am aware of is that contained in Good and Wistow (1997). To these I can add a third Irish record. **SLIGO**: Kilmacowen (G670302), 1 July 2013, a single female sieved from tidal debris, mostly *Phragmites* fragments, at the edge of coastal grassland.

With records now coming from counties Kerry and Louth, as well as Sligo, this inconspicuous little beetle would appear to be widespread in Ireland, at least near the coast.

***Bisnius puella* (Nordmann, 1837)**

SLIGO: Union Wood (G681278), ♂ 11 October 2013, in fresh badger (*Meles meles*) dung in oak (*Quercus*) woodland, Also present were *Bisnius cephalotes* (Gravenhorst), *B. fimetarius* (Gravenhorst), *Philonthus addendus* Sharp and *P. tenuicornis* Mulsant and Rey.

***Gabrius osseticus* (Kolenati, 1846)**

SLIGO: Carrowdough (G601348), 3 April 2013, sand dune foreshore; Bartragh (G262290), 5 April 2013, sandy bank in dunes. **DONEGAL**: Tullan Strand (G833618), 12 April 2013, sand dune foreshore.

***Phacophallus parumpunctatus* (Gyllenhal, 1827)**

On 10 September 2013 I revisited a compost heap at Ferryhouse, Clonmel, Co. Tipperary (S237229), primarily to search for beetles. Few beetles were uncovered in the field, so some of the composting material was sieved and examined later at home. This revealed the presence of a

single specimen of *Phacophallus parumpunctatus* (Gyllenhal). This very distinctive immigrant rove beetle was reported from Co. Dublin by Hogan (1854), and remarkably appears not to have been reported from Ireland since. Other immigrant rove beetles present were *Lithocharis nigriceps* Kraatz, *Philonthus discoideus* (Gyllenhal) and *P. rectangulus* Sharp, as well as *Bisnius fimetarius* (Gravenhorst). *L. nigriceps* was added to the Irish list by Nash, Anderson and O'Connor (1997). The composting vegetation is present in a shrubby waste area between St Joseph's Church and the River Suir, and presumably originates from grass cuttings etc., being disposed of from the church grounds. I first visited the site in October 2000 and in the intervening years the nature of the composting material has changed from predominately leaves to mostly grass cuttings. Interesting invertebrates are invariably present, e.g. Cawley (2009). I have a record for *L. nigriceps* from grass cuttings at Ballysadare, Co. Sligo, G672294, 11 October 2013, so this beetle would now appear to be very widespread in Ireland.

***Tasgius morsitans* (Rossi, 1790)**

SLIGO: Trawalus Strand (G692558), 13 April 2012, a singleton under a stone at the base of a sandy bank.

HETEROCERIDAE

***Heterocerus fenestratus* (Thunberg, 1784)**

SLIGO: On 18 July 2013 I collected specimens of *Heterocerus* at Colgagh Lake (G744362), the males of which proved on dissection to be *fenestratus* (Thunberg). On a very hot day the beetles were numerous and active on recently exposed semi-vegetated lakeshore mud. *H. fenestratus* was added to the Irish list by Owen (1997) when he collected a specimen at Lough Gash, Co. Clare. This is the only Irish record alluded to by Foster (2010). Other beetles active on the mud were *Dyschirius leudersi* Wagner (Carabidae), *Philonotus furcifer* Renkonen, *Philonotus quisquiliarius* (Gyllenhal) and the typical (black elytra) form of *Bledius gallicus* (Gravenhorst) (Staphylinidae). *Pelophila borealis* (Paykull), *Blethisa multipunctata* (Linnaeus) and *Chlaenius nigricornis* (Fabricius) (Carabidae) were also present. The dark form of *B. gallicus* has been reported from Ireland by Lott (2008). A number of uncommon carabids have been reported from this site by Cawley (2013), and the scarce dytiscid *Hygrotus novemlineatus* (Stephens) is present in the lake.

TENEBRIONIDAE

***Lagria hirta* (Linnaeus, 1758)**

MAYO: Charlestown (G476020), 14 July 2012, a single specimen of *L. hirta* swept from nettles *Urtica dioica*, on waste ground adjacent to a disused railway line. Although a widespread beetle in the south and east of Ireland, especially near the coast, *L. hirta* would appear to be virtually

absent from the north-west of the country. Indeed the only published record I am aware of is that of Johnson and Halbert (1902) who list a Co. Derry occurrence, supplied by C. W. Buckle. This relatively large and distinctive species would appear to be a genuine rarity in these parts.

CHRYSOMELIDAE

***Oomorphus concolor* (Sturm, 1807)**

Information contained in Cox (2007) would suggest that *Oomorphus concolor* (Sturm) has a marked southern and eastern distribution in Ireland. I was therefore surprised to find, among some unidentified material, specimens which I had collected at Knockbrack, Co. Leitrim (G771577), 8 February 2006. Here two specimens were sieved from moss, collected in remnant coastal heath. This record, coupled with an old Co. Galway record contained in Johnson and Halbert (1902), hints at a wider coastal distribution in Ireland for this inconspicuous little beetle.

Acknowledgement

Thanks to Dr Roy Anderson, who confirmed a number of identifications, read over a draft of this note and for his advice.

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FIRST IRISH RECORDS OF *CRUSTULINA GUTTATA* (WIDER) WITH NOTES ON IRISH OCCURRENCES OF *CRUSTULINA STICTA* (O.P.-CAMBRIDGE) (ARANEAE: THERIDIIDAE)

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Abstract

Specimens of *Crustulina guttata* (Wider, 1834) were collected from cliff vegetation near Bray town in Co. Wicklow, the first records of the species from Ireland. Where it occurs, the spider is generally rather local but not uncommon. It is widespread across Europe and tends to occur in drier habitats. Its rarer congener *Crustulina sticta* (O.P.-Cambridge, 1861) was collected with *C. guttata* and is known only from Ireland's east coast. It usually occurs in rather humid and damp habitats. The two species are profiled and their Irish status discussed.

Key words: Araneae, Theridiidae, *Crustulina guttata*, *Crustulina sticta,* Ireland, first records, cliff, Dublin, Wicklow

Records and identification

***Crustulina guttata* (Wider, 1834)** **New Irish Record**

WICKLOW: All records were from the coastal cliff walk between the southern end of Bray town and Greystones, Co. Wicklow. Specimens were shaken from vegetation growing on the lower cliff-face into a net, the catch was examined immediately and selected specimens retained: 1♀ 28 May 2014 (O284171); 1♀, 1♀ subadult, 1♂ subadult, 2 June 2014 (O284165) from a prostrate mat of *Thymus polytrichus* on rocks; 1♂2♀♀, 2♀♀ subadults (O286161) from a prostrate mat of *Thymus polytrichus* on rocks.

Identified using Roberts (1993); the spider has a very distinctive appearance, with clear pale abdominal markings on a dark background, strongly annulated legs and the carapace carrying numerous warty granulations. *C. guttata* is not noted in Helsdingen (1996), Cawley (2009) or any subsequent publication on Irish spiders and the present records are considered the first for Ireland.

***Crustulina sticta* (O.P.-Cambridge, 1861)**

DUBLIN: 24 May 2004, Howth Head, 1♀ (O269370), 1♀, 1 immature (O271369), south-facing cliffs, shaken from *Calluna* plants; 12 June 2004, Howth Head, 1♀ (O269370) from base of tall *Calluna* plant; 30 August 2004, Howth Head, 1♀, 1 immature (0271368), a fire had burnt

vegetation extensively in this area and the female was taken here, the immature from an unburnt *Calluna* shrub. **WICKLOW:** (new county record) Bray cliff-walk (O284165), 1♀ 2 June 2014 from a prostrate mat of *Thymus polytrichus* on rocks.

Identified using Roberts (1993). This spider is less distinctive, with a pale band on the anterior and margins of the abdomen and extending down the midline, on a brownish background. The legs are unmarked but the carapace carries the characteristic warty granulations.

Species profiles

Crustulina guttata

Distribution: Palaearctic (Platnick, 2014), occurring from Europe to North-western China and Japan (Song *et al.*, 1999) but not known from southern China or south-east Asia (Murphy and Murphy, 2000). Found in most European countries occurring from Fenno-Scandia to the Mediterranean, into Russia and the Northern Caucasus (Helsdingen, 2013a, 2013b; Otto, 2014). Absent from most Mediterranean islands. Locally common but generally scarce in Britain (Harvey *et al.*, 2002), it is most abundant in south-eastern England with scattered records from central England and a few from Wales or further north. In France, more frequent in the north-west however the species probably occurs throughout (Le Peru, 2006). **Preferred environment:** most records are from mesothermic to xeric habitats. It occurs in a wide range of habitats, even in Britain where it is not frequent (SHRS, 2014). There it prefers sandy soils (Harvey *et al.*, 2002) and most records are from moor, heath, coastal dune and shingle habitats. Most other records are split between woodland and open grassland habitats. The summary of Hänggi *et al.* (1995) has the species occurring in central Europe most frequently in xerothermic wood steppe, vineyards, rubble-piles and coastal dunes. Less frequent in *Molinia* meadows, semi-dry grasslands, deciduous, coniferous and peatland woodlands. Regular in *Pinus* woodland in a number of countries, *inter alia* Britain, Sweden and the Czech Republic (Buchar and Ruziska, 2002; Harvey *et al.*, 2002; Almquist, 2005). Occurs in other habitats including scree margins (Buchar and Ruziska, 2002), and heather and juniper stands (Le Peru, 2006). **Semi-natural habitats:** a small number of records from parklands and gardens in Belgium (Keer *et al.*, 2010) and post-industrial landscapes in Britain (SHRS, 2014). **Micro-habitat:** spins a small web in vegetation close to ground level; also amongst leaf-litter, mosses, under stones and bark (Harvey *et al.*, 2002; Le Peru, 2006; Braud, 2007) and found amongst moss in winter (Braud, 2007). The majority of specimens are taken in the litter and herb layer (Hänggi *et al.*, 1995; SHRS, 2014). Builds a small frame-web with strands reaching to the substrate, the lower ends of these are gluey to trap passing ants (Almquist, 2005). **Season:** adults occur throughout the year (Harvey *et al.*, 2002; Le Peru, 2006; Braud, 2007). In Britain, numbers of both sexes peak

in June (SHRS, 2014) and are lowest from December to January. Braud (2007) suggests fewer specimens are seen in late summer and early spring.

Crustulina sticta

Distribution: Holarctic (Platnick, 2014); North-America, Europe, Russia, China, Japan, but not South-East Asia (Murphy and Murphy, 2000). Widespread through Europe, rather rarely found and not known from many countries including Norway, many of the major Mediterranean islands, Switzerland, and a wide swathe of land from the Dalmatian coast east to the Black sea (Helsdingen, 2013a; Nentwig *et al.*, 2014; SHRS, 2014). **Preferred environment:** the only previous Irish record was from an area of wet dune meadow/slack on Ireland's east coast (Snazell, 1983) very close to the more recent records. Generally found in humid and damp habitats, often coastal, and many non-coastal records are from wetlands. Favoured central European habitats are bogs and swampland (Nentwig *et al.*, 2014). In Britain, over one quarter of records are from heath/moor and above another quarter from coastal habitats: dunes, shingle and saltmarsh. It has been recorded from a variety of wetland and grassland habitats in smaller numbers (SHRS, 2014). In France, records are mostly both coastal and wetland including *Phragmites* (Le Peru, 2006) and Braud (2007) notes it from humid moorland. Coastal dunes and *Sphagnum* bogs in Sweden (Almquist, 2005), *Sphagnum* bog in the Netherlands (Gajdoš and Toft, 2000) and marshy *Carex* habitat in Poland (Kupryjanowicz, 1997). **Semi-natural habitats:** Le Peru (2006) notes it from cereal fields. **Micro-habitat:** builds a small scaffold web from vegetation to substrate. Primarily recorded from ground-layer and low-vegetation (<20cm) (SHRS, 2014), under stones, amongst *Ammophila* (Almquist, 1973), *Juncus* litter (Le Peru, 2006), mosses (Braud, 2007), *Cladonia* lichens (Almquist, 1973) and herbs (Le Peru, 2006). **Season:** British data has males recorded only from May to July with a maximum in May. Females are probably found all year round, being most abundant from May to September, and reaching a minimum in October/November and from February to April (SHRS, 2014). February to May in north-western France (Braud, 2007) but also recorded there from September to November (Le Peru, 2006). **Conservation status:** it is considered scarce rather than threatened in Britain and the damp nature of its preferred habitats should be maintained to encourage the spider (SHRS, 2014).

Comments

The combination of a coastal situation and fast draining, rocky, semi-vertical location seems to serve both species by offering an environment that is sufficiently dry for the one and sufficiently humid for the other. The species have been noted to occur together previously: the

type locality of *C. sticta* was from "under heathy ledges" on Bloxworth Heath and *C. guttata* had been collected there the same year "at the roots of heath" (Cambridge, 1861).

The amount of sampling carried out when I collected the spiders was very small and would suggest that *C. guttata* at least could be very abundant along the Bray cliffs. The undisturbed nature of the cliff vegetation in Bray and Howth is probably significant since neither spider occurs frequently in managed habitat. Considering those habitats in which the two species most regularly occur elsewhere and thus in which they might be expected to occur in Ireland, it can be noted that surveys of midlands raised bogs, calcareous grasslands (including eskers and other glacial deposits), and of east and west coast dune systems have produced neither *C. guttata* nor *C. sticta*. Obvious likely locations where either or both species might be expected to occur are areas of cliff and coastal rocky vegetation on Ireland's east and south coasts.

Present evidence suggests that the two species are confined to Ireland's east coast and this might in turn suggest that they are relatively recent advents. The absence of records from other likely habitat in Ireland might support this line of thought. There is not much in the way of evidence to suggest that either species has spread significantly within Europe in recent times. There is little to suggest also they are species susceptible to transportation by human agency. I am not aware if either species disperses by ballooning and this possibility cannot be excluded. There are no particularly strong grounds, to my mind, for suggesting that *C. guttata* is a recent advent to Ireland and more likely, the species has been missed up to now.

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